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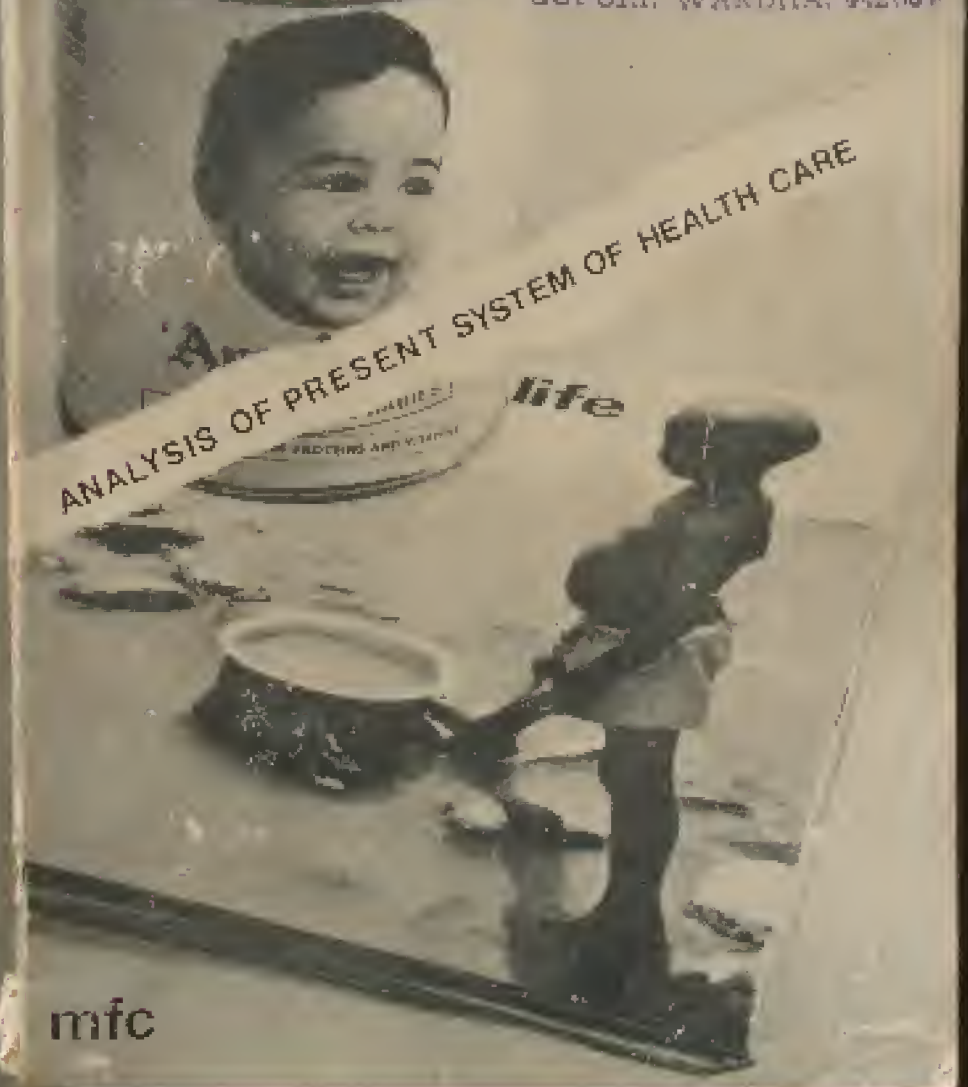

ANALYSIS OF PRESENT SYSTEM OF HEALTH CARE

mfc

CHETANA — VIKAS
GOPURI, WARDHA. 442001

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This book is an anthology of the articles selected from the back issues of *Medico Friend Circle Bulletin*, a monthly journal devoted to analysis of present health system.

The *Bulletin* is published by Medico Friend Circle which, is a group of people involved in health and health related activities, dissatisfied with the present system of health services in India. The Circle works with the following aims in view :

a. To evolve a pattern of medical education and methodology of health care relevant to Indian needs and conditions; and,

b. To make positive efforts towards improving the non-medical aspects of society for a better life, more humane and just in contents and purposes.

Keeping the above aims in view the group at present performs the following functions –

1. To analyse critically the present health system so as to increase the understanding of various health and socio-economic issues involved in it.
2. To foster involvement of new groups and individuals in the task of realisation of the objectives MFC stands for.
3. To publish a monthly bulletin keeping in view the above functions.
4. To encourage medicos to take up health, developmental and educational activities for neglected communities.

If you wish to subscribe for the *Bulletin* or to become a member of Medico Friend Circle use the form given on the last page of this book for further enquiry.

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Analysis of Present System of Health Care

Edited by
Ashvin J. Patel

medico friend circle

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Editorial note

Many friends would like to share with Irene Peter's experience—*'Today if you are not confused, you are just not thinking clearly.'* Then one may feel disturbed to see people with dogmatic ideology and inch to inch detail blue print of action programme.

In field of health, most disturbing are the robots. This group of people is totally indifferent about its action and forces governing its action. It does not feel need to be aware about them and like to live a *programmed* life. Therefore, this group cannot perceive any sign of *illness of present day health services.*

Second group of people justify the present day health care system. Many of them genuinely believe that the system and approach are perfectly relevant; and some

administrative measures and increase in allocation of funds must rectify *the illness*.

While third group questions the very relevance of present day curative biased, centralised and capital intensive health services; it does not try to go beyond it and becomes complacent in trying to evolve alternative approaches.

When there is premature applause for so called alternative approaches, it becomes urgent and essential to re-examine the various premises on which diagnosis of *the illness* is based.

Thus, to many diagnosis is certain and unchallengeable. And happily they have found out sure solutions too. Attention is focussed precisely on *the ball* rather than on *the goal*. Moreover goal is fixed by someone else. Albert Einstein's words epitomise the scene, '*Perfection of means and confusion of ends seem to characterize our age.*'

This can be illustrated amply by plethora of books on appropriate technology in field of health. Here the chief culprit indentified or rather mis-identified is the form of package of health services. And so the solution sought for is technological, administrative and managerial. Naturally, emphasis is on simplified medical care techniques, training of village health workers, community participation, self-reliant and multi-sectoral approach, etc. No doubt, the direction, contents and methodology of health services are crucial in achieving the objectives, and the field experiments seeking alternatives are welcome to that extent. But can we afford or justify breeding and perpetuating the illusion that we know the diagnosis and its therapy ?

This book tries to have a fresh look at the problems in field of health. The book is an anthology of selected articles from the back issues of *Medico Friend Circle Bulletin*, which wishes to help the search of true diagnosis. Though the titles of various chapters may suggest unrelatedness to each other and cover wide range of topics from Medical Education to Dairy Research, readers will find a number of common factors interlinking each chapter to the other; eg. the basic criterion to judge the validity of any programme or institution is to ask if it is meeting the needs of the last man. Each chapter analyses specific problem in unconventional and radical way examining its fundamental premises and their implications in terms of conceptual and operational ramifications.

An additional feature of the book is inclusion of two working papers which were prepared, for medical students and young doctors, to initiate a questioning process and to increase awareness about, hitherto neglected dimensions of different problems. Similar working papers have been discussed in many work cum-study camps of MFC. It was encouraging to see that many friends realised the magnitude and complexity of the problems and a need to understand them realistically.

I hope, this book will help find many friends willing to participate in the process of arriving at real diagnosis. Whatever may be the ultimate diagnosis, solution would demand dauntless determination and total commitment on the part of those who are involved in the process. I earnestly request the friends who would like to join the process to fill up the

EDITORIAL NOTE

Assessment Questionnaire given on the last page of this book.

An apology is called for, the delay in publication of the book and spelling mistakes. I would, particularly, like to thank the staff of Yagna Mudrika, who not only made it possible to print the book in very short time but also took personal interest to put their best efforts for it. Thanks are also due to Amit Gandhi for designing the cover. I am thankful to OXFAM for subsidising the cost of producing the book.

Ashvin J. Patel

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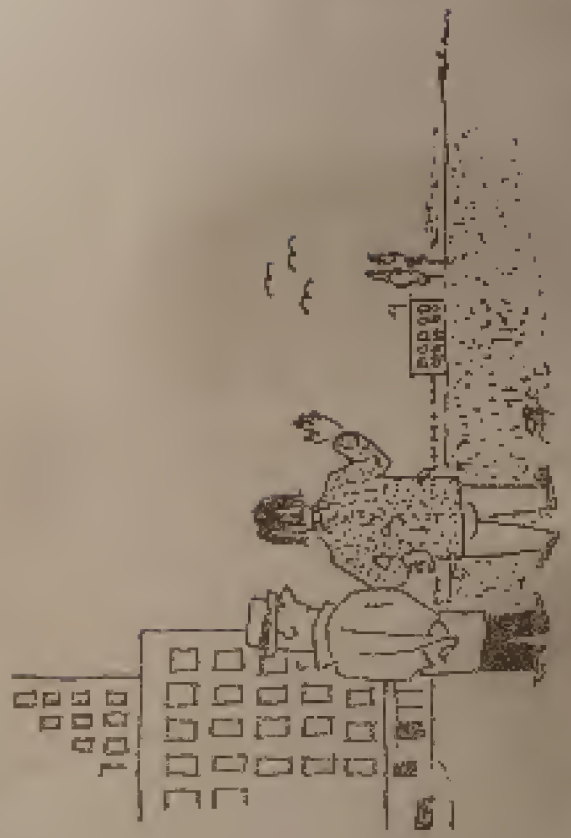


"No – that's the new management block on the left. The hospital is the little building on the right."

1

Evolution of Health Services in India

D. BANERJI

AFTER independence, the health services system of the country was shaped by the two key political decisions of the new leadership. Following the political commitments made during the struggle for independence, provision of health services to the vast masses of the people—particularly for those living in rural areas—was made an important plank of the Directive Principles for the State Policy of the Indian Constitution[1]. The other political commitment which turned out to be an even more sacred and of overriding importance was to bring about the desired changes in the health services system without making any basic changes in the then existing machinery of the government.

The personnel of the Indian Medical Service of the British days and the "Brown Englishmen" were called upon by the Indian leadership to provide the initiative in shaping the proposed new health services system for India. These personnel, who like those of the Indian Civil Service, belonged to elite class of administrators. They were former officers of the British India Armed Forces who had opted for civilian work. They were also trained in the traditions of the western countries. Political independence brought to the fore two additional issues which profoundly affected the cadre of the Indian Medical Service. Firstly, the withdrawal by the British officers after independence caused a sudden vacuum in their ranks. This came as a windfall to a number of not so competent officers, who were catapulated into positions of key importance simply because they happened to become senior in the cadre because of the very large number of vacancies caused by the departure of the British. Secondly, by adhering strictly to the seniority rules, when the health services were expanded very rapidly to meet the requirements of the newly formulated health programmes, the administration drew more and more from the relatively small group of people who had entered the services in, say, 1930-35, 1935-40 or 1940-45 to meet the very rapidly increasing manpower needs for key posts. As a result, a large number of the key posts in the health services got filled by persons, who, even from the colonial standards, were not considered to be bright.

Such a massive domination of the organisation by men who were trained in the colonial traditions and whose claim to a number of vital posts in

development administration was based merely on their being senior in the cadre, led to a virtual glorification of mediocrity, with all its consequences[2pp.56-62]. What was even worse, such a setting was inimical to the growth and development of the younger generation of workers. Often these young men had to pay heavy penalties if they happened to show, on their own, enterprise, initiative and imagination in their work. Conformism often earned good rewards. This ensured perpetuation of mediocrity within the organisation.

Because of their being inadequate for the job, these Brown Englishmen went out of the way to appeal to foreign experts for help and the latter have generously responded to such entreaties. A large number of foreign experts were invited to play a dominant role in almost every facet of the health services system of the country.[3]

Medical Colleges, Teaching Hospitals and other Medical Care Facilities in Urban Areas

Two divergent forces in the country—availability of relatively very much larger amounts of resources for the health sector and perpetuation by the technocrats, the bureaucrats and the political leadership of the old privileged class, western value system of the colonial days gave shape to a health service which had a strong urban and curative bias and which favoured the rich and the privileged.

It is significant that when the country had only about 18,000 graduate physicians and about 30,000 licenciate physicians [4 p. 85], one of the first major decisions of the popular government of India in the

field of health was to abolish the three year post matriculation licenciate course in medicine [6.p.ata]. While recognising "the great lack of doctors", the very large majority of the members of the Health Survey and Development Committee (Bhore Committee), probably "strongly influenced by the recommendations of the Goodenough Committee in the United Kingdom" [6. p. 340] asserted that resources may be concentrated "on the production of only one and that the most highly trained doctor" [6 pp. 339,348]. The Committee had made elaborate recommendations concerning the training of what it termed as the "basic doctor" and stressed that such training should include "as an inseparable component, education in community and preventive aspects of medicine" [6.pp. 355-356].

The Medical Council of India, a direct descendent of the Medical Council of Great Britain, which is the statutory guardian of standards of medical education in India, has issued repeated warnings against reviving the licenciate course. The Health Survey and Planning Committee of 1961 (Mudaliar Committee) [5] has also emphatically rejected the idea of reviving such a short-term course because they were "convinced that the proper development of the country in the field of health must be on the lines of what we consider as the minimum qualification for a basic doctor" (p.349). It went on to state: "India is no longer isolated and is participating in all problems of international health. The WHO has laid down certain minimum standards of qualifications. In view of India being an active member, participating in all public health measures on an international

basis, we think it will be unfortunate if at this stage once more the revival of a short term medical course is to be accepted" (p. 349).

One of the saddest ironies of the medical education system in India is that resources of the community are misused to train doctors who are not suitable for providing services in rural areas where the vast majority of the people live and where the need is so desparate. By identifying itself with the highly expensive and urban and curative oriented system of medicine of the west, the Indian system actively encourages the doctors to look down on the facilities that are available within the country, particularly in the rural areas, and they look for jobs abroad and thus cause the so-called brain drain. As if that is not enough, till recently these foreign trained doctors have been pressurising the community to spend even much more resources to attract some of these people back to the country by offering them high salaried prestigious positions and making available to them very expensive super sophisticated medical gadgets. These foreign trained Indian specialists, in turn, actively promote the creation of new doctors who also aspire to "go to the States" to earn large sums of money and to specialise. Emphasis on specialisation, incidentally, causes considerable distortion of the country's health priorities thus causing further polarisation between the haves and the have-nots.

Those who are unable to go abroad, they try to settle down in private practice in urban areas, often linking their practice with honorary or full-fledged jobs in urban health institutions run by the government. Only some government jobs are non-practicing. As a

result of such considerations, a desparately poor country like India finds itself in a paradoxical position in relation to the distribution of the doctors in the country : the urban population, which forms 20 per cent of the total, accounts for 80 per cent of the doctors.

To be sure, pretending to follow the recommendations of the Bhore Committee, soon after independence upgraded departments of preventive and social medicine were created in medical colleges, at the instance of the government and of the Medical Council of India, to act as spear-heads to bring about social orientation of medical education in India. However, as in the case of so many other ambitious and morally lofty government programmes, concurrently it was also ensured that the very spirit of this programme is stifled, if not totally destroyed, by actively discouraging in various ways its actual implementation. For instance, instead of mobilising the finest brains in the profession to bring about social orientation, most of the positions in the departments of preventive and social medicine were filled by the discards, who were often found intellectually inadequate to get into the highly competitive and prestigious clinical disciplines, or even the paraclinical disciplines. This gave enough opportunities to the threatened foreign trained super specialists to ridicule the entire discipline of preventive and social medicine and bring it down almost to the bottom of the prestige hierarchy of disciplines in a medical college[17]. Significantly, the political leadership —the ministers and legislators, who are beholden to these super specialists for their personal needs of various kinds, winked at this systematic desecration

of the philosophy of social orientation of medical education in the country[18].

Along with the very rapid proliferation of very expensive teaching hospitals for medical colleges, each having a number of specialities and super specialities, a number of general hospitals were established in urban areas. The number of hospital beds shot up from 113,000 in 1946 [3, p. 74] to the present figure of 330,000 [19, p. 94]. There has also been a rapid increase in the number of dispensaries for providing curative services to urban populations. There were over 1807 urban dispensaries in 1965 [10, p. 120]. The development of medical colleges, teaching hospitals and other hospitals and medical care facilities has accounted for a large chunk of the investment for health services in the country's Five Year Plans [5, p. 70, 14, p. 10]. The recurring cost for these institutions accounts for over three fourth of the annual health budget of a State [11, p. 6].

Mass Campaigns against some major Health Hazards

The fact that despite their obvious overriding importance, preventive services have received a much lower priority in the development of the health service system of India, provides an insight into the value system of the colonels of the Indian Medical Service, the British trained bureaucrats of the Indian Civil Service and, above all, the value system of the political leadership of free India. The colonels did not appear to relish the prospects of dirtying their hands —getting involved in problems which required mobilisation of vast masses of the people living in rural areas. The rural population raised in the minds of these decision makers the spectre of difficult accessibility, dust and

superstitious, ignorant, ill-mannered and illiterate people. Therefore, when they were impelled to do some preventive work in rural areas, characteristically, they chose to launch military style campaigns against some specific health problems.

Undoubtedly, because of the enormous devastation caused by malaria till the early fifties, this disease deserved a very high priority. But the programme became a special favourite of the colonels not only because it required relatively much less community mobilisation, but it also provided them with an opportunity to build up an administrative frame work to launch an all out assault on the disease in a military style—in developing preparatory, attack, consolidation and maintenance phases, in having "unity of command", and surprise checks and inspections and in having authority to "hire and fire". Significantly, some of the followers of the colonels went so far as to compare the malaria campaign with a military campaign[12]. Another enthusiast for military methods has written an entire book[13] describing the growth of the health services in independent India as if he is describing a military campaign.

Experience of implementation of India's National Tuberculosis Programme brings sharply into focus the limitations of this military approach to developing a health service system for the people of this country. On the basis of a series of operational research studies[14], it was demonstrated that it is possible to offer facilities for diagnosis and treatment to over a million and a half of sputum positive cases who are known to be actively seeking help for their illness from over 12,000 to 15,000 health institutions in

various parts of the country. But because of failure of the programme administrators to develop a sound health delivery system on a permanent basis for the rural populations of the country, more than a decade after the launching of the programme, less than one fifth of these sputum positive cases, who have an active felt need, are being dealt with by the programme organisation[14]. This provides an example as to how the militaristic urban privileged class value system has come in the way of building a health service system to meet even some of the very urgently felt needs of the people of the country.

After some pilot projects, a National Malaria Control Programme was launched with the help of the United States Technical Co-operation Mission, the World Health Organisation and the United Nations International Children's Emergency Fund (UNICEF) in 1953 to cover all the malarious areas of the country, then involving a population of 165 million [15, p. 14]. It achieved a phenominal success; for instance, the number of malaria cases for every 100 persons visiting hospitals or dispensaries declined from 10.2 percent in 1953–1954 to 4.0 percent in 1958–1959 [15, p. 14]. This success emboldened the administrator to think in terms of totally eradicating the disease from the country, once and for all. The danger of the mosquitoes developing resistance to the main weapon for malaria control, DDT, was given as additional reason for embarking on the eradication programme. Besides, pressure was also put on India by foreign consultants from WHO and elsewhere to embark on the eradication programme as it was to become a part of the global strategy propounded by the WHO[12, p. 1].

It was also stated, to give economic grounds for the decision, that while the control programme was estimated to cost about Rs. 270m in the Second Five Year Plan (1956-1957 and 1960–1961) and Rs. 350m during the Third Plan (1961–1962 and 1966–1967) and thereafter continued to remain a heavy item of expenditure, " the cost for the eradication programme was estimated to be Rs. 430m in the last three years of the Second Plan and Rs. 580m for the entire Third Plan with the annual expenditure becoming negligible thereafter"[13, p. 118]. The immediate successes of the National Malaria Eradication Programme were even more spectacular, but a disastrous snag developed in implementing the maintenance phase of the programme[10, pp. 4-6]. It turned out that among other factors, because of preoccupation of the administrators with specialised mass campaigns against malaria and other communicable diseases, they had not paid adequate attention to building a permanent health service system— the so-called health infrastructure - strong enough to carry on the malaria surveillance work effectively at the village level. This has been responsible for a series of setbacks to the National Malaria Eradication Programme, resulting in the reversion, at a very considerable cost, of large segments of the maintenance phase population on to consolidation or attack phases. Instead of getting rid of malaria once and for all by 1966, as it was envisaged in the late fifties, 40 per cent of the population is still to reach the maintenance phase[15, p. 5]. The National Malaria Eradication Programme thus continues to drain huge quantities of scarce resources even today thus making it even more difficult to

find resources to develop the health services infrastructure.

During the last four years, for instance, less than 3 percent of the additional population (9.4 units) has entered the maintenance phase[15, p. 5]. Meanwhile the country is forced to set aside huge chunks of its very scarce resources to prevent the programme from sliding still further. As against the envisaged expenditure of Rs. 1,315 m, the National Malaria Eradication Programme has thus far sucked in over Rs. 2,500 m, [15, p. 926 and 20]. In addition, Rs. 967m have been set aside for it for the next five years [15, p. 23-24] and even this allocation might have to be raised still further. In spite of this the chances of eradicating malaria in the foreseeable future does not appear to be very bright. So the country will be compelled to keep on pouring in resources on this programme to see that the disease does not come back in an epidemic form as it has happened in some other countries.

Also, following the model of the NMEP, a specialised military style campaign was launched in 1963 to eradicate smallpox within three years [15, pp. 138]. Once again the campaign conspicuously failed to achieve the result of eradication. Only recently (1973-74) yet another campaign has been launched to eradicate smallpox " once and for all"[15, pp. 29-30]. A mass campaign to provide BCG vaccination to cover the entire population of the country, and to continue to do so periodically, was the first effort to deal with the problem of tuberculosis in India as a public health problem[15, pp. 120-121]. This programme, unfortunately, also failed to yield the desired results[21]. Special campaigns have also

been launched against leprosy, filariases, trachoma and cholera with even more discouraging results[1, p. 1149].

The health service system of the country had hardly recovered from the consequences of the very costly failures of the mass campaigns against malaria, smallpox, leprosy, filaria and trachoma, when a large bulk of investment in health was cornered by another specialised campaign – this time it was against the rapidly rising population of the country. The Fourth Plan investment in family planning was Rs. 3,150m as against Rs. 4,500m for the rest of the health sector of the country [2, p. 11]. This involved deployment of an army of 125,000 persons [3, p. 15]. All of them were specially earmarked for doing family planning work only. Significantly, once again, this programme was also developed by officers belonging to the Indian Medical Service— the colonels, with strong backing from foreign consultants from various agencies. Predictably, once again, this campaign also failed to attain the demographic objectives, with disastrous consequences, both to the programmes for socio-economic development as well as to the development of a sound infrastructure of health services for the country [4, pp. 225-227, 17].

Recognising, at long last, the weaknesses of this campaign approach, recently the Government of India has veered round the idea of providing an integrated package of health, family planning and nutrition services with particular emphasis on the weaker sections of the community [18, p. 194]. This package in turn, is a part of a bigger package of the Minimum Needs Programmes of the Fifth Five Year Plan (1974–1979) which is meant to deal with some of

the very urgent social and economic needs of the rural populations of the country[20, pp. 87-91].

Development of a Permanent Integrated Health Service System for Rural Areas

The Health Survey and Development Committee[19], which was set up by the British Indian Government in 1943 to draw a blueprint of health services for the post-war British India, had shown exceptional vision and courage to make some very bold recommendations. These included development of an elaborate health service system for the country, giving key importance to preventive aspects with the "countryside as the focal point"[16, p. 9]. To forestall any criticism of the recommendations on grounds of practicability, pointing out the achievements in health in the Soviet Union within a span of 28 years (1913-1941), it asserted that its recommendations are quite practical, in fact relatively very modest, provided there was the will to develop the health services of the country[8, p. 30]. Unfortunately, however, the leaders who took over from the British did not show this will. They had quoted, often out of context, the recommendations of the Bhore Committee to justify abolition of the licenciate course and to establish a very large number of medical colleges with sophisticated teaching hospitals in urban areas. They also invoked the Bhore Committee to justify to setting up an even more sophisticated All India Institute of Medical Sciences in New Delhi on the model of the Johns Hopkins Medical Centre of the U.S.A. [5, p. 322]. A number of other postgraduate centres for medical education were also set up in due course. It, however, took them over seven years even to start opening

primary health centres to provide integrated curative and preventive services to rural populations of the country[21]. These primary health centres were a very far cry from what was suggested by the Bhore Committee; they did not have even a fourth of "the irreducible minimum requirements" of staff recommended by the Bhore Committee for a given population (and that too only as a short term measure)[15 p. 11]. Furthermore, it took more than 10 years to cover the rural populations in the country even with this manifestly rudimentary and grossly inadequate type of primary health centres.

The entry of the National Malaria Eradication Programme into the maintenance phase and concurrent development of an extension approach to family planning provided a transient impetus to providing integrated health and family planning services through multipurpose male and female workers[21]. But the clash of interests of the malaria and the family planning programmes again led to the formation of unipurpose workers for malaria and family planning[21]. What was even worse, application of very intensive pressure on various workers of primary health centres to attain family planning targets led to the neglect of whatever health services, which were earlier being provided by the PHCs, thus causing a series of further setbacks to different health programmes[2 p. 49]. Maternal and child health services, malaria and smallpox eradication, environmental sanitation and control of other communicable diseases, such as tuberculosis, leprosy and trachoma, are examples of the services which suffered as a result of preoccupation of health workers with achieving the prescribed family planning targets.

Very recently, following the recognition of the fact that a unipurpose, high pressure military type campaign approach which does not ensure a concurrent growth and development of other segments of health and nutrition services will not be able to yield the desired results, as pointed out above, decisions have already been taken to integrate malaria, family planning, maternal and child health, smallpox and some other programmes and thus provide an entire package of health, family planning and nutrition services to the community through male and female multipurpose health workers[18, 19].

The Indian Systems of Medical Services in India

There are three major indigenous systems of medicine in India: Ayurveda—the Hindu medical system; Unani—the Greek system of medicine; and the Siddha system, which can be considered to be a specialised branch of Ayurveda. After independence, these systems were subjected to two contradictory pulls: their being firmly rooted in the culture of the people of the country for centuries and their rich heritage invoked considerable admiration and even certain degree of emotional attachment from a large section of the population of the country. And, at the same time, long neglect of these systems of medicine led to a very sharp deterioration in the body of knowledge, in their institutions for training and research, in their pharmacopia and drug industry and in their corps of practitioners. Therefore, while the leaders of independent India built almost the entire health services on the lines of western system, they have from the very beginning, shown sympathy for the Indian systems of medicine and have made available some grants for them[23].

2

Objectives of Medical Education

D. BANERJI

Social Objectives

SOCIAL objectives determine the educational objectives of medical education in any country. Because of the difference in social objectives there are different educational objectives in different countries. Educational systems of the United States, the U.K., Western Europe, Soviet Union and other East European countries, China, Latin American and African countries reflect the different social objectives. At one extreme a social objective of medical education in a country can be to ensure that the educational system prepares physicians who are specially moulded to serve the requirements of the country. At the other extreme the social objective of medical education could be to train professional physicians who are well versed with

the knowledge of modern medicine in its most sophisticated forms and who are trained mostly to provide services to those who can afford to pay for such services. In the later instance physicians are expected to provide services to the community in gradual phases so that in due course the entire population will be covered when it acquires the capacity to buy the medical services.

In the context of the Directive Principles for State Policy of the Constitution of India and the political commitments, leaders of independent India unhesitatingly defined the social objective for medical education to ensure that medical and health services available to the entire population of the country. Taking very deliberately a socialistic attitude towards the health services, the aim was to make available health services particularly to those sections which had so far been ignored. All the documents of the Five Year Plans dutifully enunciated these social objectives of the medical education in India. As a matter of fact, even before independence the Bhore Committee had made a very strong case in favour of a radical social orientation of medical education in India so that it could serve larger population groups in the country.

Following these social objectives, the government ensured that upgraded departments of social and preventive medicine are established to bring about social orientation of medical education in India. The most urgent need for providing some elementary but vital health services to the entire population of the country also underline the desirability of using medical education as one of the major means of bringing about social transformation of Indian society. With

this objective in view, medical education was also highly subsidised, with the state contribution accounting for as much as 90% of the total cost of training a physician.

Despite all these social commitments it is now generally accepted that in practice these objectives were not attained. Even though medical education in India is almost entirely subsidised by the state, such facilities are available only to the children of a tiny privileged class of the society. The culture of the medical educational institutions in India is such that instead of promoting training of students who can grapple with some of the most urgent health needs of the people, they are actually encouraged to look outwards. Because of the value system of the teachers, reference models of the students are the highly developed foreign countries. Despite all the protestations of the Medical Council of India, the content of medical education continues to remain such that it can encourage people to migrate out of the country so that they not only can earn a great deal of money but also get the so called professional satisfaction of working in well equipped and well financed medical institutions. *Brain drain* is inevitable under such circumstances. Furthermore, most of those who are unable to go abroad or those who return from abroad, tend to flock in urban areas. Those who go for private practice either as general practitioners or as specialists are, ofcourse, available mostly to the affluent sections of the community. Location of community supported health institutions in urban areas also ensures that the community health services, particularly of the curative kind, are available much more easily to the more privileged sections of

the community. This trend is very actively promoted by the political leadership, because the latter depends heavily on such urban oriented sophisticated specialists to meet their own needs and the needs of the class they belong to.

Ironically, therefore, in practice medical education serves the almost diametrically the opposite social purpose—that of serving the few. This is doubly tragic because they are highly subsidised by the community on the understanding that it should become a potent instrument for social change in the country. Such an obviously contradictory situation can be explained when it is examined in the context of the social, economic and political forces which give shape to the health services system of the country. The British had evolved a medical education system to suit the needs of the colonial government. After independence while making radical declarations about the social objectives of medical education, the leaders did not purposely change the mental outlook of the teachers of the medical colleges, nor did they take any specific steps to make facilities for medical education available to the poorer sections of the community. This mixture of lofty social commitments and almost total identification with the interests of the privileged classes eminently suited the political leadership. This purposely jumbled social philosophy enabled them to persuade the larger sections of the community to believe that action was being taken by the leadership to meet their needs. Perpetuation of the old colonial culture of medical education, on the other hand, also ensured that highly subsidised health care services are made available to the privileged sections of the community on a priority

basis even though it had to be given to them at the cost of denying some of the most elementary, preventive and curative services to the vast masses of the people of India. The stand of the political leadership of independent India eminently suited the interests not only of the bureaucracy which was derived from the privileged classes but also of the other vested interests, both indigenous and foreign, which were controlling the means of production and distribution.

Because of this apparently contradictory and almost *double faced* attitude, which Myrdal has called the attitude of a *Soft State*, India has the unenviable distinction of being one of the very few countries in the world which still harbours smallpox; where such easily preventable communicable diseases as tuberculosis, leprosy, trachoma, filaria, ankylostomiasis, enteric fevers and dysenteries are so rampant; where there is still very high rates of infant mortality and morbidity; where there is widespread hunger and malnutrition; and where more than 80% of the mothers are denied even the most elementary material services at the time of child birth.

Educational Objectives

Logically, confusion in the social objectives should be reflected in the educational objectives. Here also one can discern that a schizophrenic approach is adopted in faculty selection, in research, in formulating the curriculum for medical education to the students. While on one hand lip service is paid to the need for relating medical education to the requirements of the community, on the other hand teachers in medical colleges find nothing in heaping on the students huge

and uncoordinated chunks of knowledge on such areas as neuro-physiology, sophisticated cosmetic surgery and miracles of organ transplant without caring to ensure that the student who is to work in India gets thoroughly familiar with the ways of dealing with the tuberculosis problem under Indian conditions or with the way of organising maternal and child health services in rural areas or with the ways of dealing with the problem of leprosy in high endemic areas.

Unfortunately, following as a logical consequence of the privileged class orientation of the medical profession in India, because of very rapid expansion of medical education in the last two decades, medical colleges had to draw teachers from among the very small cohort of colonial oriented physicians who were available at the time of independence. Not only were they deeply immersed in the colonial conditions but even among them they represented the left overs who got wind fall in the form of getting a number of additional job opportunities opening before them because of rapid expansion of medical colleges.

Persons who were only suitable as demonstrators according to the colonial standard suddenly found themselves occupying key positions of professors, directors and deans. This led to a virtual glorification of mediocrity and, what is worse, this mediocrity was transmitted to the budding physicians so that the entire culture of medical education got degenerated into a self perpetuating low-brow group of individuals who sustained themselves by glamourising one another. Even the few who ventured to show evidence of original and creative thinking in the field of medical education were very purposely suppressed so that they

do not become a threat to the culture of mediocrity.

The departments of preventive and social medicine which ought to have attracted the brightest of the brains of the country to give a new dimension to medical education in India were the worst victims of this culture of glorification of mediocrity. These departments got packed up by mostly with not so creative and imaginative persons and they started to breed their kind so that today discipline of preventive and social medicine occupies almost the bottom level in the prestige hierarchy among the medical science disciplines.

Conclusion

Because of this overall culture of medical education which is derived from the social, political and economic forces of that dominate, almost every facet of activities in the country medical education today is in a sad state. Even though the very precious and limited resources of the country are being diverted to the training of physicians, these physicians are developing an attitude which is diametrically opposed to the actual requirements of the society. The teachers of medical education should be held accountable for actively promoting this rapid degeneration of the entire system of education in India.

It is difficult to work out the reasons why members of the health services have tried to separate 'health concerns' from other parts of the total rural hopelessness complex. Is it because we do not understand the problem or feel incompetent or powerless to influence the main issues or because we want to 'control' our own field? Whatever the reason, it is clearly not because we have scientific 'evidence' that it is the most effective or the cheapest way or that it is what people want. On the contrary, we have studies demonstrating...that a strict health sectoral approach is ineffective. If we do not consider our restricted approach to be valid, then our reaction to its rejection is even more strange. As the health services fail in their bid for additional resources to further their priorities, the health profession then backs on the problem and direct their energies towards developing additional methods for helping the privileged people who can both afford and appreciate them.

K. W. Newell in "Health by The People" WHO 1976

3

New National Health Policy

Anant Phalke

THE Government had appointed a committee in November 1974, under the chairmanship of Dr. J. B. Shrivastav to suggest reforms in the existing pattern of health services and medical education. The specific terms of this committee were to devise a suitable curriculum for training a cadre of Health Assistants who would serve as a link between the qualified medical practioners and the Multipurpose Workers. Another task assigned to the committee was to suggest suitable steps for the implementation of recommendations made by previous committees on medical education and to suggest reforms in the exsting medical education " so as to provide due emphasis on the problems particularly relevant to national requirements ". The

committee submitted its report in April 1975. The orientation put forward by the committee is very much similar to that of the MFC. Moreover, it has suggested some concrete steps within the framework of this orientation. Today the question of increasing the seats in medical colleges is being discussed. The Janata Government has prepared a crash programme of preparing community health workers in three months. This report addresses itself to these questions. I have therefore, prepared a summary of this report titled *Health Services and Medical Education – Programme for Immediate Action* [published by the Indian Council of Social Science Research].

GENERAL PRINCIPLES

The committee has at the begining clarified its orientation by putting forward some general principles :

(1) " A universal and egalitarian programme of efficient and effective health services can not be developed against the background of a socio-economic structure in which the largest mass of people still live below poverty line....There is therefore no alternative to making a direct, sustained and vigorous attack on the problem of mass poverty...."

(2) If development is to mean development of men and not of things, then education and health must receive highest priority and aedquate allocation of resources.

(3) We must abandon the over professionalized and consumption oriented model of health services copied uncritically from the West which is inappropriate even for the Western nations themselves. More emphasis should be put on human efforts than money inputs.

(4) "Health is essentially an individual responsibility ....every individual must be given the relevant information about his body and its functioning, must be taught the essential health skills and must be enabled to develop values of self control and discipline without which no person can remain healthy". The Committee thus correctly identifies the aim of making the population less and less dependent on professional help.

(5) The provision of safe drinking water, disposal of human excreta, control of communicable diseases etc. is a responsibility of the community.

(6) "The state has an overall and supreme responsibility for providing a comprehensive and nation-wide network of health services".

(7) It is necessary to rely on large bands of part-time semi-professional workers from among the community itself. The professional service should supplement rather than replace these para-professional workers.

(8) The programme of national health services must be focussed on the rural community itself rather than on the big cities with the illusion that it would eventually spread to the villages.

(9) The conflict between the traditional patterns of healthcare and the modern western system should be resolved by evolving " a national system of medicine and health services, in keeping with our life systems, needs and aspirations ".

(10) No programme of health services can succeed without education which alone can give each individual the needed information, skills and value orientation

and vice versa. These two must, therefore, be blended accordingly.

(11) Since undernutrition is most wide-spread it must be attacked. Minimum food must be ensured to everybody by universal employment and through a large scale public distribution system.

(12) Vigorous action against population explosion on various fronts is necessary.

Except for this last principle, all other principles taken as a whole constitute a definite departure from the consensus that exists in the medical community. Most of the doctors do not go beyond the usual rhetoric about "upgrading the medical education" which they identify with what is taught in Britain, or which would enable the students to pass their ECFMG examination. Most of the professors do not think beyond upgrading their own department. Against this background this set of principles is significant.

PROBLEMS OF IMPLEMENTATION

But can these principles be brought into practice? Take for example, the central question of abolition of unemployment and hunger. Six years back, V.M. Dandekar and Ruth in their famous *Poverty in India* calculated that it is necessary to spend 1000 crore rupees per year to solve the problem of **rural** poverty in India. In many ways, it was a gross underestimate. R. Sau in his *India's Economic Growth Constraints and Prospects* shows the extent of underestimation by Dandekar and Ruth. He shows that more than 3000 crores would be required per year to abolish unemployment and hunger in both rural and urban India. But so far only Rs. 100 crores per year have been

allotted for the Employment Guarentee Schemes. It is utopian to think that the Janata Government is 30 times better than the Congress Government in this respect. Similarly extremly massive amount of investment is necessary to implement the irrigation schemes. From where would the government raise resources? Deficit financing and taxation has reached its limits (Indirect taxes have increased 18 times since independence). No government can solve these problems until it remains within the framework of market economy, an economy geared to the production of profit. We have seen as an example in our analysis of the drug-industry (See chapter 8) as to how an industry based on production for profit necessarily leads to various types of wastages of resources. What is true for the drug industry is also true, with some differences, for other industries. Thus for example, studies conducted by the U.S. Aid, by National Council for Applied Economic Research (NCAER) or by Federation of Indian Chamber of Commerce, all have shown that in India about 30% to 40% of the production capacity in large-scale industries remains unutilized.

Vietnam with its war-ravaged economy and with much smaller industrial base is on its way to solve the problem of unemployment and hunger because the people of Vietnam have discarded the model of economic development based on commodity production i.e. production for market.

These remarks were necessary to show as how the problem of health is closely related to problem of economics and politics. MPC stands for principles much similar to those put forward by the Shrivastav Committee report. But we must be aware of the

limitations within which we will have to work so long as the existing economic and political structure continues.

There are however some concrete steps suggested by the Shrivastav Committee, many of which can be implemented even within the existing framework of our society. The committee has suggested four programmes for immediate implementation.

Let us deal with them one by one, in a very brief manner :

(1) Organization of basic health services within the community itself and training of the personnel needed for the purpose.

The committee suggests that young persons who have been educated till say the matriculate level, should be selected from amongst the community itself. They should be suitably trained "according to the best knowledge and skills made available by the latest developments in medical and health services" so that they can provide the elementary health and medical services needed by the community. These trained workers would work on a self employed basis. The government would provide them necessary equipments and drugs at reasonable prices. This cadre would constitute "an agency which is close to the people, has their confidence and is economical to operate, for providing the immediate, simple and day-to-day medical and health services needed by the community". The committee feels that they would constitute a much better foundation for the pyramid of professional health services, and one which can be laid even with the limited financial resources that are

available. The committee points out that there are 2.5 million primary school teachers and 1.5 million housewives educated upto matriculation and beyond in the rural areas. They can be trained for this programme. The committee has not specified the duration and content of the training to be given to these persons. It has suggested that the Director General of Health Services should prepare these details once the programme is accepted in principle by the Government. The committee has however, specified the following categories of workers to be created through this training – dais, family planning workers, persons who would give specified remedies for specific ailments, persons "trained in the skills needed in programmes for control of communicable diseases", and lastly, persons who can help to develop promotional and preventive health activities.

I personally feel that except for the suggestion of training dais and family planning workers, the suggestion of training other categories is a mistaken one. An educated house-wife can be quickly trained in the correct technique of conducting normal deliveries without teaching her the science of obstetrics that forms the basis of such a technique. But it would be dangerous to teach her certain specific remedies for specific ailments and with this knowledge (!) entitle her a semi-professional status. Because of easy availability and low cost, people would seek medical advice from her. In a child, simple cough may rapidly turn into broncho-pneumonia, or fever into an attack of diphtheria. All serious diseases manifest themselves as simple symptoms to start with. Any person attending to the

sick in professional capacities must have some systematic training, however preliminary, in Anatomy, Physiology, Pharamcology and Clinical Medicine. Lacking training in such subjects even at an elementary level, the educated house-wife turned into a semi-professional would not be able to distinguish between symptoms of serious ailment from those of non-serious ailments. She will go on giving symptomatic treatment without knowing anything about the underlying progress of the disease. It would be dangerous to entitle a professional status to such a woman. The committee has not specified as to how much training should be given to these housewives so as to turn them into semi-professional workers. But it seems that it would be of a very short duration. The next category of workers which the committee calls as "Health workers" is to receive a training for 6 months. This is the minimum amount of training required to train anybody in order to enable him to treat even simple complaints. Similar considerations would apply to workers "trained in the skills needed in programmes for the control of communicable diseases" and those who can "help to develop promotional and preventive health activities" since they are also supposed to work in responsible semiprofessional capacities.

The gap between the professional health services needs to be narrowed not through the semi-professional workers but by raising the health consciousness of the community as a whole. Thanks to the audio visual aids, certain concepts, practices can be propagated even to the illiterate masses.

(2) Reorganization of the PHC

The Bhore Committee had suggested in 1946, that a PHC should cater to a population of 40,000 and in the long term the committee visualized a PHC to serve a population of only 20,000. But 30 years have gone and we have one PHC for 80,000 to 100,000 population. The Srivastav Committee feels that since it is not possible to improve upon this performance to a great extent, attempts should be made to train a large number of Health Workers and Health Assistants as the Committee calls them.

(a) Health Workers

The committee feels that it is necessary to create a single multipurpose cadre to provide all the different promotive, preventive, and curative health services needed (including the control of communicable diseases). At the moment there is one male Health Worker for every 6000 to 7000 population and one female Health Worker for every 10,000 population. The committee has recommended that by the end of the 6th plan, we should have one male and one female worker each for every 5000 population.

In principle, this suggestion seems to be a sound one. Only practice can tell us as to how effective would be these health workers in becoming a link in the network of health services to be built in the rural areas.

(b) Health Assistants

The systematic training of this category of health workers is one of the most important recommendations of this committee. Their role would be that of assisting the work of the doctors at the PHC level and

forming the link between PHC and the Health workers. They would do three types of functions – curative, public health and supervisory functions. The curative function would consist of first aid in emergencies and their referral to the PHC and diagnosis and out patient treatment of common diseases. There are a number of public health functions to be carried out by the Health Assistants and also the work of supervising the work of Health Workers. The Health Assistants are "invariably" to be located at the subcentres, and not at the PHC.

The committee has suggested that the minimum qualification for admission to the course of Health Assistants should have passed higher secondary examination or its equivalent with medical group of subjects and mathematics. The person would be trained for 2 years including a period of 6 month's field work. The first and second semester (1000 hours) would be spent in training in Anatomy, Physiology, Microbiology, Parasitology and Entomology, Pathology, Pharmacology, Laboratory procedures and health oraganization practices. The committee has suggested a farther breakdown of the 1000 hours of training. Each sub head is alloted a specific number of hours. The distribution seems to be fairly balanced except that Family Planning and population explosion have received 100 hours whereas all basic sciences and Laboratory procedures together have received only 101 hours.

Today, there is a category of Health supervisers. The committee feels that they can work as Health Assistant after a training for 6 months. The committee has suggested a certain curriculum for this training also.

After the work of David Morley in Nigeria and others elsewhere, including in India (see for example the work of Shah–Jannarkar–Dhole reported in the MFC bulletin December 76), it has now been fairly well established that a network of health services can be built in rural areas based mainly on the health workers of the category of Health Assistants. The great success of these pioneering, experimental projects has been to a large extent, due to the great devotion of the persons involved in these projects. It is utopian to expect that the scheme suggested by the committee would achieve the same kind of success. But it would definitely offer some measures of medical relief to the rural poor. The committee has suggested that there should be a male and female health assistants each for a population of 10,000. If Health Assistants are created on such a large basis, they can provide a network of health services of some use to the rural poor.

(c) The Primary Health Centre

The work of the Health Assistants would reduce the burden of the doctor as far as simple ailments are concerned. He can therefore devote more attention to the referred cases and other programmes related to health. Inspite of this, the committee feels that one more doctor should be provided at each PHC especially to manage Maternal and Child Health Services. It has also recommended that the annual drug budget of the PHC should be increased from the present level of Rs. 12000. Lastly it has been suggested that instead of sending fresh graduates to the PHC they should be sent to the district, or taluk–tehsil hospital and senior doctors should be sent to the PHC. The basis of the recommendation

being that the present medical education does not produce a doctor properly oriented to community needs. But are senior doctors properly oriented? When it is a matter of orientation and motivation, there is no difference between the junior and senior doctors. One of the most important reasons for failure of the PHCs has been a lack of proper motivation of the doctors. Like everybody else in this world of commodity production, money and profit, he is also interested in amassing more and more money. The senior doctor is more skilled but is no different from the fresh graduate when it is a question of orientation.

(3) The Creation of National Referral Service Complex

The network of health services in rural areas must be supported by the referral guidance of the taluk/tehsil, district, regional or medical college hospitals. At present these hospitals are completely isolated from the local community and the PHC. The committee has therefore recommended that this gap must be filled up through a properly organized internship programme. The interns should not be posted to big teaching hospitals in the metropolitan city, where they have no responsibility to shoulder. Instead, they should be posted at the taluk or district hospital. This will necessitate increasing the quality of these hospitals and will provide a centre where cases from adjoining areas can be referred. " Such hospitals should also take on selected communities within their catchment areas whose care would be the responsibility of the interns under supervision of that particular hospital". The interns will have to shoulder more responsibility in these hospitals and thus can become fledged doctors

capable of tackling cases on their own. It will also expose them more to the problems of the community than what is possible under the existing scheme. Lastly the new scheme " will also act as a pace-setter for decentralization of medical education and development of district hospitals in the foreseeable future as centres for imparting medical education."

(4) Creation of necessary administrative and financial machinery for the reorganization of Medical and Health Education

The committee points out that the existing pattern of medical education is quite irrelevant to the health needs of the population. " The greatest challenge to medical education in our country therefore is to design a system that is deeply rooted in the scientific method and yet is profoundly influenced by the local health problems". The committee has gone into various aspects of medical education in order to suggest a completely new orientation to it.

(a) Objectives of undergraduate medical education

" There is a definite need to define the skills that a doctor should have and the qualities that he should possess". This has been done by various bodies on medical education. One common theme that emerges from their reports is that " the overriding objective of undergraduate medical courses should be to give a positive community orientation to the entire programme". The curriculum, the duration of training and the instructional methods will have to be reshaped in view of the changed orientation and " the principles of educational science should find increasing application in the education process".

(b) Premedical education

The new pattern of school educatien that is now being implemented consists of two years of study of premedical science. The committee feels that this will result in a better and more closely integrated premedical education. But since "medicine is practised not in a world bounded by science alone, but is one in which economic, cultural and social influences play an important role", the committee feels that the study of humanities and social sciences should also be included in the premedical education. This will " provide the student with an intelligent understanding of the past and of the great ideas that have moulded human civilization ".

(c) The curriculum and the duration of undergraduate medical education

The committee chose to make merely a few points in regard to the curriculum. The major task, it feels should be to give community orientation to the education, a responsibility, not only of the PSM department; but of all departments. " There should be an emphasis on the teaching of nutrition, maternal and child health, immunology and infectious diseases and reproductive biology and family planning " (today, topics like nutrition and child health are given very little emphasis). Along with the change in emphasis of the subjects, the committee has suggested a reorientation of the methods of teaching and evaluation. The curriculum itself " should reflect the application of some of the principles of educational science, namely encouraging the students to learn by themselves, introduction of a system of continuous assessment of

student learning, objective methods of assessment, small group teaching, integrated inter disciplinary teaching and accent on the experimental methods ".

With the reorganization of health services, the work of treating simple ailments will be done by the Health Assistant. In the new set-up, the doctor would have to treat more complicated cases at the PHC rather than sending them to the district or metropolitan hospital. He will have to guide and teach the Health Assistants. This will require a highly trained and competent doctor than what is the case today. The committee therefore feels that there is " hardly any sense in suggesting the reintroduction of the diploma or licentiate course for meeting the needs of rural areas ". It is of the firm opinion that the standard of medical education should not be lowered in order to save funds. "But even on good academic considerations, we do feel that it is possible and desirable to reduce the existing duration of the course by six months to one year and yet ensure an improvement in standards". The committee emphasizes that..... not the duration of the course but the production of the right type of the doctor which is the crucial issue. We do not produce the right type of doctor even with this long duration and a mere shortening (or lengthening) of the course will not, by itself produce the basic doctor".

(d) Continuing education

Today the process of systematic learning stops once a doctor gets out of his medical college. On the other hand there is a great need that he should be continuously educated in order to keep in touch with the advances in medical science that are taking place

very rapidly. The committee has therefore emphasized the need to "develop an organizational pattern for the continuing education of physicians...." This education "must concern itself with those issues that are of deep significance to the health of the community and also with the educational activities for the mixed team of health workers".

(c) The Medical and Health Education Commission

So far various educational committees and commissions have made many recommendations about the **content** of change, the kind of change we need to make. But all these suggestions have been in vain because "there is no structure to bring about the needed changes, and in the absence of the structure, the question of initiating the change process does not even arise". The committee recognises that under such circumstances, it is useless to make "yet another series of pious and well meaning recommendations on the content of the reform of medical education". "It is therefore of the utmost importance that a suitable structure of an organizational framework should be established which is charged with the task of implementing the needed reforms and of initiating and nursing the change process". Such organization exist for general education, agricultural and engineering education, but not for the medical education. The committee has therefor suggested the establishment of the Medical and Health Education Commission. It should be patterned after the UGC. It should be responsible for planning and implementing the reforms needed in health and medical education. It should have on it the representations of all the relevant national councils and should work in close

collaboration with them. Each council should set up an education panel on prescribed lines and the medical and health education commission should be obliged to consult these panels. The committee feels that the establishment of this commission is the "most important step now needed" to start the process of change.

The commission has purposely been named "Medical and **Health** Education Commission" since the doctor is not the sole category to be educated. The para-medical personnel also constitute a very important link in the chain of health personnel and they must be properly trained.

There will be a number of questions and doubts about the details of the committee's recommendations. But one thing is certain – we should discuss this report seriously and should put forward our suggestions. I have put forward very brief summary of their 56 page report. But I hope that this summary will help us in thinking about our perspective in more concrete terms. We must be able to put forward an alternative to the ridiculous instant solution devised by the Janata Government. But we must always remember that any scheme is necessarily going to become merely a temporary symptomatic treatment of the malady that affects our health system. The real curative treatment lies in transforming the socio-economic system which gives rise to these maladies.

Increasing and irreparable damage accompanies present industrial expansion in all sectors. In medicine the damage appear as iatrogenesis. Iatrogenesis is clinical when pain, sickness and death result from medical care; it is social when health policies reinforce an industrial organisation which generates ill health; it is structural when medically sponsored behavior and delusions restrict the vital autonomy of people by undermining their competence in growing up, caring for each other and aging or when medical intervention disables personal responses to pain, disability, impairment, anguish and death.

Ivan Illich in 'Medical Nemesis'

4

Future of Modern Medicine

Manu Kothari & Lopa Mehta

AT a time when Nobel awards for Medicine chase only the molecular biologists, when the basic-science route is considered *the* way to medical *nirvana*[1-5] and when Presidents and politicians roll up their sleeves to conquer, say, cancer[6-7] at any cost, it is time to speculate on the shape of medical things to come, by the close of this century.

The air, in countries overdeveloped or otherwise, is of given-enough dough-anything-can-be-achieved. Assuming the entire OPEC earnings were pipelined to medical research from today, what would Modern Medicine (MM) be in the 21st century? Let us consider the medical futurama in 3 parts : (a) where MM is right now; (b) why it is where it is; and (c) what

would MM be, given 25 years and money for the asking! Diseases in our medical school days were conveniently classified as congenital and acquired, the latter comprising of traumatic, infective, neoplastic, metabolic, degenerative, and psychic; the same classification can be used here.

Where MM is right now

"It is a sobering thought that after several decades of research, a number of international conferences and many other meetings, seminars and symposia, the problem of human malformations remains essentially unchanged". Having so introduced a symposium, McKeown[7] proceeds to chastise MM further on human malformations—etiology unknown, rate unchanged, relative contribution to infant mortality greatly increased. Trauma, MM can "treat," for God, *a la* Ambroise Pare, continues to heal the wound with the same pristine secrecy that a century's research[8] on wound-healing has not scratched even on the surface. "Few things are certain in life, but the rapid appearance of bacterial resistance to a newly introduced drug is one of them."[9] The latest bug to bug antibioticism is the penicillinophagic gonococcus, reported by Phillips[10] from St. Thomas's, London. Dubas[11] begins his chapter with disquieting heading—THE SO-CALLED CONQUEST OF MICROBIAL DISEASES—pointing out that there has been no decline in the percentage of hospital beds occupied by patients with infections, as compared to 50 years ago. On the tumour front,[12] the outcome of untold manhours of research and uncountable moneys—now more people live on cancer than die of cancer[13]—has been "precisely nil,"[14] the whole

anticancer crusade having been declared as "scientifically bankrupt, therapeutically ineffective, and wasteful."[15] Diabetes mellitus, as a paradigm of metabolic disorders, continues to ail from definitionlessness and is comprehended the less and less the more and more we know about it.[17,18] Cardiovascular disorders have not decided where they etiologically belong and research on its leading members—myocardial infarction, hypertension, stroke—offers nothing special to write home about.[19-24] On the senescent front, rats kept in a "Rat Palace" senesce the same way as do rats in sewers, forcing the investigators to declare that degeneration and death are unalterably, and predictably, built into the rats, the rat-findings being comfortably extrapolatable to the human situation[25]. While hopes are raised that some *wundermittel* might prevent the decay of aging,[26,27] Selye[28] concluded a gerontological symposium on a totally pessimistic note. Finally coming to psychiatric disorders, one has only to see/read **One Flew Over the Cuckoo's Nest,** to realize where the psychiatrists and their patients are.[29-31] It may be that the foregoing forced Malleson[32] to write **Need your Doctor Be So Useless?,** and Burnet[33] to candidly declare that MM as an enterprise has virtually reached the stage of zero returns.

Why is MM where it is?

The responsible factors operate both within MM, and without. The former include MM's **causalism, experimentalism, compromisism and promisism.** The latter comprise biofarces that are wholly outside MM's realm—**individuality,** herdity (**herd–ity**), and **temporality.**

Causalism—the kill-joy crusading that makes breakfast butterless/breadless/sugarless/cyclamateless/coffeeless, and amorous bedtime fraught with cancer-has not for once satisfied the basic tenet of causalism : the **cause** must be followed by the **effect**, and the **effect** preceded by the **cause**, without any temporal gap in between. Bertrand Russell[2] threw away causalism from "advanced science" long ago, but it seems to survive in MM, probably because MM is neither advanced nor scientific. A direct offshoot of causalism is preventionism which "contains more unknowns than scientific truths."[2,3] The unmitigated failure of MM on all major fronts is by itself a testimony to the failure of MM's **experimentalism**. In cancerology, for example, experimentalism has not provided one causative/curative cue that was not known before the experiments were started.[35,36] A learned book[5] purporting to solve MM's problems has a recurring refrain — "the absence of a suitable (animal) model"; yet having admitted so, it goes on to describe one experiment after another, in one section after another. The force that keeps MM's experimentalism alive and kicking has been aptly summed up by Burnet:[37] "I believe, however, that one might justly summarize American medicine as being based on the maxim that what can cure a disease condition in a mouse or a dog can, with the right expenditure of money, effort and intelligence, be applied to human medicine." MM's **compromisism** consists in its being unable to define essential hypertension, diabetes mellitus, cancer, immunity, tumour immunity, and so on, and yet spawn on each one of these a burgeoning science—each oversized, amorphous and labyrinthine,

with ramifications that have neoplastic autonomy, draining away resources in "a remorseless but seemingly purposeless growth."[38,39] MM is more political[1,6,7,40] than potent, and hence **promisism** is its only way of survival. That is how cancer is **cured** every week,[41] and prophylaxis and cure of diseases are promised via **genetic engineering**[42] that also forms the title of a new MM journal[43].

The more important thwarters of MM are too far from its curative reach, too abstract to be attacked by OPEC opulence. Every human being is governed by the biofarces of individuality, herdity, and temporality biolaws that can be understood, not altered. Individuality implies, in Dubosian[44] phraseology, unprecedentedness, unparalledness and unrepeatability, an insituation from which even homozygous twins are not exempt. Herdity means that every feature—anatomic, physiologic, pathologic—of an organism is a part of the whole herd, enjoying its own place somewhere on the curve of normal distribution and falsely designated *hyper-*, *eu-* or *hypo-* by the medical men suffering from diagnosophilia. Temporality or chronicity (*chronos*, time) is a bit difficult to appreciate, but Portmann[45] makes it lucid : "Animal life is configured time."

Individuality rules out our breaking the transplant barrier, even among the inbred animals. No two individuals throughout the history of mankind would have the same "immune" genotype for the individualistic repertoire of DNA is endless—"the figure 256 followed by 2.4 billion zeros."[46] Despite "successful" renal transplants[47] now running into thousands, the problems[38,48] that plague the procedure remain

unabated. Immunosuppressors promote graft-survival—at what overall cost, we do not know—but MM has no means[45-47] of altering the self-ishness of a single human being, a situation that makes transplant, a hit-and-miss measure for all time to come.

An individual's biotrajectory is an unpredictable element[48] ruling out modern medicine's ability to predict who will get what disease, when, and to what end. Screening programmes will thus always remain a travesty of medical common sense; prognostic judgments shall betray the judge now and again; therapy by rule of the thumb (and so it will always be because of an individual's unpredictability) will boomerang often to prove costlier than the disease. Many a patient, with diabetes far more severe than that of his physician who strives to be fit as a fiddle, will outlive the latter, a thing equally true of heart disease, hypertension or cancer. Physician, better kneel before the nemesis of thy perennial ignorance!

Herdity is the least understood aspect of biology. It is, to use a Galtonian phrase, "the supreme law of unreason" that governs the **distribution** of all phenomena in a herd, thus dictating that someone with carcinomatous stomach dies at 19 and someone at 91, or that someone's serum cholesterol level should be on the "higher" side because someone else has it on the "lower" side both being normal. The medico is merely nursing an illusion when he relates the "levels" to heart attacks or hypertension. Willis[50], the tumour pathologist, has alluded to "the smooth ideal curve of the age distribution of a large series" of cancers in general. What is normal, MM seems to forget, is the frequency distribution, that shows

itself as the typical bell-shaped Gaussian curve serenely ruling over such mundane things as ocular refraction,[51] red cell diameter,[52] and the effect of PH/temperature on enzyme activity,[53] as well as such anxiety-making things as blood pressure,[54] serum cholesterol[55], IQ,[56] age incidence at-diagnosis of/death from gastric ulcer,[57] duodenal ulcer[58] carcinoma stomach,[59] in men and women. The tails of the normal Gaussian curve 'stretch to infinity,"[60] a thing that explains carcinoma tongue in a new born, or a disease-free individual aged 105 years. Summarizing, one may define herdity as a force that governs the ages, levels and so on, in a herd, the herd controlling the individual and vice versa. "Population thinking denies uniformity and looks to the **range** of diverse individuals within a group. The range, not the average, is the reality[61]".

If, *a la* Portmann[62], man is configured time, then man as being time-bound, is unhelpably and unarrestably prone to disfigurement on passage of time. Cancer is not a disease, but a programmed event, strictly obeying the **temporal** programme within an individual, in consonance with the herd. "Senescence takes a generally similar form in each species, whether judged by the physicochemical changes in collagen, the incidence of degenerative changes in blood vessels or the high incidence of malignant disease....The essence surely is that there is a generic 'programme in time' laid down for each species. There must be a biological clock and a means by which a series of processes can be made to occur according to the expediencies of evolutionary survival." This **timely** statement by Burnet[63] on human/animal survival and

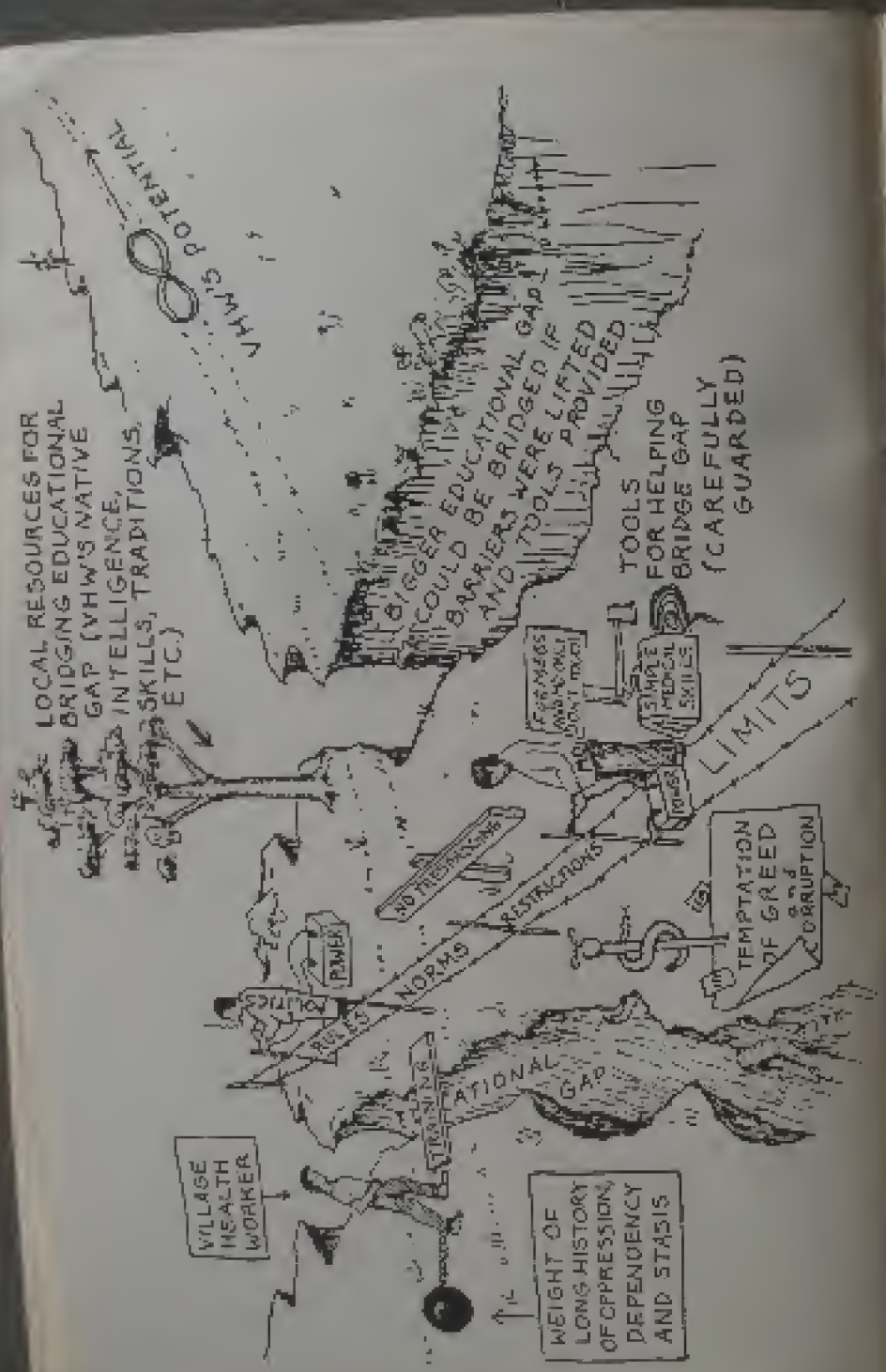
senescence sums up the truth about herd mortality governed by time. The appellation **chronic** is most appropriate for all forms of degeneration ranging from a symptomless cervical spondylosis to a rapidly lethal cervical carcinoma, since both the processes are temporal, or chronic. It is not this gene or that, that mediates the occurrence of heart attack or cancer. It is the time-order that the genes follow in harmony with the herd and in conformity with the individual's programme.

What would, or should, MM be by 2000 AD?

By then, it may have freed itself of the anthropocentric do-goodistic cocoon, to view life, disease and death from a wider, biological, perspective. Hopefully, then, MM would be more aware of the ignorance it is steeped in and the uncertainities it faces. When this is made public, more doctors and more patients will abjure "exaggerated opinion of the powers of medicine," a relevant warning-phrase that Jacob Bigelow[58] uttered in the earlier half of the 19th century. "Medicine, like woman's shoes, is governed by the dictates of fashion." Having said this, Humphries[59] suggests that the fashion ought to turn in the direction of economy rather than into that of waste and pollution. If Humphries is heeded to, the **Everest Complex**—"because it is there"—would no longer dominate medical research, although this is a moot point on which to cite an example, two top men[8,36] from the same leading institute hold polar-opposite views. MM had better bear in mind its rank ignorance on such simple things as wound healing or the definition of a gene, so as to persuade the engineering-proponents[12] into

crying a halt. The hazards of tinkering with the genes may more than offset the gains."[60]

Thanatorealism—that death has its own rightful reasons for being around—is gradually dawning upon lay and medical minds.[61-63] To this robust approach to death, MM may add a robust approach to life by emphasizing **a la** Thomas,[27,64] the built-in durability and sheer power of the human organism, instead of portraying it—as is the raging fashion now—as a teetering, fallible contraption always in need of watching and doctoring. Life may not be demedicalized to the Illichian extreme, but surely, all that is unnecessary—9/10th of what is prescribed[65]—could easily be done away with, by 2000 AD.



5

A Rush for Alternatives

Imrana Qadeer

A GRADUAL shift to community oriented health services is quite obvious from the current literature on health and an attempt to evolve an alternative approach is becoming the order of the day. While the trend is welcome, it has to be analysed with caution because at times the cry for comprehension and community either tends to become more of a slogan rather than a well thought of answer to the prevailing problems, or is intended to contain an explosive situation as far as possible. Some of the current publications of the WHO and the UN make an interesting study in this context. These are :

1. Alternative approaches to meeting basic health needs of populations in developing countries, WHO.

2. Health by the People, WHO

3. What Now (The 1975 Dag Hammarskjold Report)

Of these, the first is a record of the 20th Session of UNICEF-WHO Joint Committee on health policy. The second edited by Newell is a review of certain health plans adopted by different developing countries and the third a document discussing certain broader issues of the contemporary world.

The first document which starts with demands of "revolutionary changes" and "radical reforms" quickly takes shelter under the safety of neutrality and hopes that "inspite of the magnitude and gravity of the problem and the widespread poverty, ignorance and lack of resources, much can be done to improve the health of the people in the developing world." Newell, however, has taken greater pains to look into the complexity of the problem. He explores the inter-relationships between health and total development in a "comprehensive approach." It is for this purpose that he reviews various experiments in the field of health which were accompanied by a broader developmental process (the degree and extent of which varied in each case). The common feature of these experiments which impressed him most was the wider goal which most of them adopted. "Total development is their objective and in the process of achieving it, communities found means and ways of providing health care to people". Newell finds this shift from achievement of health as an end in itself, to its being a part of a process of change, very welcome. However, he does not go into the problems relating development in these experiments and prefers to end up by saying,

"there are many roads to success." While both Newell as well as the participants of the 20th session of the WHO join hands in applauding the experiments, Newell's retreat is much sadder.

This is because, the participants of the 20th session do not even make an effort to look into the issues of social and political systems and their relevance to health, while Newell after having recognised the importance of national will and effort (which leads to redistribution of resources) in bringing about large scale overall changes over shorter periods of time, tends to treat all the three categories of experiments with equal enthusiasm and thus obscures the relevance of a variable he himself emphasised. He thereby not only undermines the relative importance of "wider development" essential for better health of the people (which cannot be optimum in a framework where health services alone are made the target for improvement like in Iran) but also ignores the fact that intensive efforts of comprehensive nature conducted by highly dedicated people even if they are consistant with national goals (like India and Indochina), may not necessarily be reproducible at the national level. This is not only because of the highly atypical inputs but also because of the fact that these experiments are conducted within a given socioeconomic system whose premises remain untouched. The moment that becomes a possibility the continuance of the experiment itself would be threatened. He also does not take note of the fact that time is an important factor which varies widely in all the three categories. All this is not to deny the possibility of "many roads to success" but to point out that one has to consider

the feasibility as well as the limitations of these various paths.

As far as one agrees in principle with the concept of development which means " satisfaction of needs of the poor who constitutes the worlds majority, at the same time, development to ensure the humanisation of man by the satisfaction of his needs for expression, creativity, conviviality and for deciding his own destiny, " there is no reason why health workers may not spell out the kind of societal framework which makes this objective attainable. Once that is done any of the " many roads " may be taken depending upon the reality of the situation and the preferences of the people. By saying therefore, that " the forces that bring about political change are beyond the scope of this discussion ", Newell cannot get away from the responsibility of emphasising the need for such a change. A counter-argument to this stand is Illich's proposition that it is only through a better understanding of these forces and their influence on health that we can make health services one of the instruments for change. Another fact that Newell does not realise is, that rejection of political systems of those countries which have succeeded in bringing about major changes in their economic and social base, should not necessarily mean automatic acceptance of the constraints of other political systems. In other words, it is not simply a question of rural development being possible " if one goes about it in an acceptable way ", but of an acceptable political system for rural and overall development. It is because of this contradiction that except China, Cuba and Tanzania (to some extent) none of the other quoted experiments have been able

limit either the expenditure on proportionately smaller urban populations or the development of two unequal types of health services within these countries. It is in this respect that the 3rd document (the Dag Hammarskjold report) stands out distinctly both in its lucid analysis as well as its alternative (however, idealistic it might be) to the existing political, social and economic balances.

The attempt of the first two documents to look for alternatives also suffers from certain conceptual, methodological and analytical weaknesses. The basic confusion that creeps into the concept of " primary health care " is due to a lack of distinction between " Basic Health Needs " and " simplified health services. " The result is a premature applause for the later and conclusions like " simple primary health care works ", without actually demonstrating their effectiveness by keeping the non medical developmental inputs constant (like availability of food, sanitation and increased productivity). This is true for all projects except for Iran where although the project has no inbuilt not health inputs (excluding water and sanitation) but due to the sudden increase in Petrodollars there has been some trickle down effect in the economy resulting in some degree of economic relief in the rural areas. Again, this is not to in any way discredit the efforts to make health services simple and widely available but to point out that their impact is intimately related to the state of availability of other basic facilities to people and that they have to be optimised within the total developmental programme. A point which again the Dag Hammarskjold report very clearly makes.

This brings us to the methodological question of what processes these various projects adopted to arrive at the chosen health care delivery system and was the system optimised? Unfortunately none of the case studies elaborate on this issue. Inspite of impressing the need not to further elaborate on "health services as they are now organised but rather on new ways of identifying basic health needs and of providing simple health measures" both groups of evaluators gloss over this inadequacy of the project reports. In this respect the most that we get is the information that in Cuba and Venezuela good care was taken to make use of epidemiological data while formulating health care programmes and periodic review were made to fix the quality and norms of care but there is no mention of any of the details of these processes. This defeats the purpose for which the whole exercise was meant that is, of evolving an optimum health care delivery system within various kinds of developmental strategies, formulated in different political settings. One, therefore, cannot get away from the responsibility just by saying that "there appears to be no good reason why the world should wait for the answers to be prettily packaged and presented". This may be an impatient optimist's view but is certainly not scientific.

The case studies are further handicapped by the absence of any data pertaining to the indices which might have helped the reader in assessing the impact of these programmes.

Another problem that has not been pointed out by the evaluators is the fact that although most projects have attempted to develop a grass-root

worker and some kind of infrastructure to provide curative and preventive services, most of them primarily talk about curative aspects only. While it is true that to begin any kind of total health care programme curative services are essential, it does not exclude the possibility of an interwoven on running programme of public health. Such an approach is not apparent at least in the on going programmes in Niger, Nigeria, Gautemala and even Tanzania. While they all mention communicable disease prevention, immunisation and MCH services, the extent of coverage and continuity of these programmes is not clear.

One, therefore, wonders as to why these projects have been picked up as case studies, as they neither demonstrate optimum resource utilisation nor are they examples of proven effective health care systems. If the idea was to emphasise the importance of total development or variety in health services or hope in the future, then health services of any country could have made the point (even by their failure). However, if the purpose was to develop an optimum alternative, then we have not picked up all the right examples nor gathered relevant information about them.

You had better put it up somewhere else. This is where I happen to live, you see.

6

Population Problem - Myth & Reality

[illegible]

[illegible]

This article does not contest the biological advantages of birth control i.e. improved maternal and child health. It is an attempt to come out of the narrow confines of biology and understand the relevance of birth control in conditions where a large number of negative influences (which are also the major causes of poor health and high birth rates) continue to persist. It also attempts to find out how birth control *per se* can lead to better standards of living of the masses.

It is generally argued that economic improvement is not likely if the underdeveloped countries let their populations grow at the present rates which dilute all economic benefits. A simple case will demonstrate the fallacy of this argument.

In any society there are two ways of resource utilisation. It is either directly consumed by the people (as food, clothing, medicine etc.) or invested in productive activity (in the shape of machines, tools etc.). When the number of men and women is large and the total resources available limited, a reduction in population size releases some resources which are either consumed by the remaining population or invested in its productive activity. It is this possibility which leads one to believe that birth control can raise standards of living of all. The crucial factor in raising the levels of living however is, HOW the sum total of a country's resources are utilised and by WHOM. For example, in an economy where the major part of the investment is made for the benefit of a select group, the resources released by population control may also be used for the same purpose, whereas, in a more egalitarian economic system, the

gains will be shared by a larger section. It is therefore obvious that while population control might have some influence in increasing the available resources, the real and the most important factor is the economic structure of a society. The impact of population control therefore cannot be assessed in isolation from the national economic policies of a country which influences its processes of production and distribution of resources.

The problem then lies in understanding the interrelations between population growth, production of resources (i.e. economic growth), and distribution processes within a given economic framework.

While production depends primarily upon a country's natural resources, the initial material investments that it can make, the level of technology and the efficient utilisation of its human resources; the distribution of resources is determined by the ownership pattern of the means of production and the economic structure of the society. It is not difficult to appreciate then, that the rise and fall of populations will to some extent influence total production by releasing or impeding resources for initial investments. This however may not necessarily become a hinderance in production if a nation's manpower is efficiently mobilised and proper technology is used to exploit its natural resources. The relationship between population change and distribution of resources however is simpler since the relative position of various classes remains the same whatever may be the direction of change. Any reduction in population and release of resources can become meaningful only with change in economic structure which regulates resource distribution. This

means that if the economic structure in a society favours some select groups only, the inequalities of that system will continue even if population control helps to increase total productivity.

We find then, that population control without structural changes in a stratified society, contributes very little to the welfare of the masses, since production largely and distribution of resources totally depend upon factors other than population control. The significance of economic measures becomes still more obvious when we realise that while population control reduces future demands upon scarce resources, economic measures help to solve the more urgent problems of providing for the well-being of the existing populations. Secondly, in terms of release of resources also, the impact of economic measures is much more compared to population control. Thirdly, the most important contribution of progressive economic measures would be reduction of inequalities, an area where population control has nothing to contribute.

The relevance of these issues is immense for a country like ours where 54 percent of the rural and 41 percent of the urban population live below the poverty line. The data on consumption demonstrates that the majority of those who are considered above the poverty line, just manage to get enough to live.

This underlines the extent of the problem of poverty. The extent of deprivation of almost 80 precent of the population also points out the futility of measures intended to release resources from this group. In other words, even if these families were forced to

adopt birth control measures, they would still be consuming their total incomes with insignificant rise in their living standard and no impact on national saving or the country's economic growth rate – which has not exceeded 3.7 percent per annum mark during the first two decades after independence. On the other hand, a large quantity of resources which lies unutilised or misutilised, could be mobilised even within the given economic framework through taxing agricultural wealth, limiting the freedom of private enterprize, appropriating excess wealth in the form of black money and checking the flow of wealth to foreign countries through multinational corporations and other agencies.

Decile groups of population from bottom (%)	Percentage share in total consumption	
	Urban	Rural
0-10	2.7	3.3
10-20	4.2	4.8
20-30	5.3	5.9
30-40	6.4	6.9
40-50	7.5	8.0
50-60	8.8	9.2
60-70	10.4	10.6
70-80	12.6	12.5
80-90	16.0	15.4
90-100	26.1	23.5

Source of table — Reference No. 2

The inequality in the Indian system is reflected by the fact that 20 percent population at the bottom shares 8 percent in the total consumption while the top 20 percent consume 39 and 42 percents in rural and urban areas respectively. It is still more obvious

when we realise that the top 10 percent of the population has 33 percent of the total disposable income in the country while the lowest 20 percent has access to only 7 percent[7]. Sixty percent of the total agricultural area is owned by 15 percent of the land holders while 69.6 percent of them own only 20.9 percent of the total agricultural land[8].

In the Indian context then, even if it is presumed that the poor economic growth rates are partly due to fast growing populations[9], the fact of glaring inequalities is difficult to escape. The basic reasons of slow economic growth and gaping inequalities lie in our socio-economic policies. For example, in the growth of India's mixed economy, the private sector was allowed to grow and make immense profits at the expense of public sector by utilising its subsidised raw materials and not giving its due share in total investments in the industrial sector[10]. The inability to produce surplus, led to heavy dependence on foreign resources. In agriculture, the concentration of land in the hands of a few created problems for small and marginal farmers who could not benefit from the modern methods of agriculture as their land holdings were too small for optimal results and the farmers too poor to buy resources. This inequality was further strengthened by the fact, that most governmental help meant for poor farmers went to the better off farmers while they lacked marketing and transport facilities. The rich farmers on the other hand, not only persuaded the government to leave agricultural holding untaxed but also managed to escape government levy and hoard their commodity till prices shot up. In the process the poor farmer suffered twice, once

when he sold his grain at low prices and twice when he buys in the periods of scarcity. The persisting inequality and low levels of agricultural growth affected industrial development by reducing demand for industrial products. This was primarily because of low buying capacity of the majority of people and their dependence on traditional methods of agriculture because of which, they could neither afford consumer goods nor make use of the modern tools and fertilisers in their agricultural activity. In return, due to non-expansion of the industrial sector, the excess labour force from the agricultural sector could not be absorbed in productive work. This further added to the prevailing squalor of poverty and the ever growing numbers of unemployed people who were estimated to be 21 million in 1972–73[11].

The population explosion therefore, which is projected purely as a result of high birth rate, is to a large extent a reflection of a lopsided economic structure. Without correcting these inadequacies and without stringent measures against the vested interests of the rich peasents, monopolists and multinational corporations, population control will only tend to relax economic tensions for a short while without providing a lasting solution to the problem.

Evaluation of India's family planning programme

Uptill now we have examined the impact of population control on economic progress, we shall now see the other side i.e. the impact of economic and social conditions on population size. To understand this, we shall take India's family planning programme during the sixties and early seventies and examine the problems that it faced.

India's experience with family planning programme has not been very happy. The country spent 1.4, 21.56 and 248.6 million rupees during the first three five year plans, 704.64 million in the interplan period and another 2800.696 million rupees in the fourth five year plan. For the fifth plan it proposes to spend 5160 million rupees,* on the programme[1]. The rising expenditure has not necessarily meant better performance. In fact expenditure on every case has risen over the past 20 years primarily because of the expansion in infrastructure.

To begin with, the programme was hailed as an answer to India's population problem. It was to bring prosperity to the people with the help of technology and education even in the absence of economic changes. The optimism was based on the presumption that the entire population shared the planner's view on family planning. It was strengthened by studies which claimed to show that though people did not practise family planning, majority of them had a positive attitude towards it[1]. It was inferred therefore, that if services were made available to people the programme was bound to be a success. In the process of expanding the programme, efforts were centred on "creating outlets for provision of services, methods of birth control and producing motivators". The most important issue i. e. why people want and produce more children was generally ignored. Without appreciating the constraints imposed by the living conditions of the people, the programme persisted in its drive to

* Modified Fifth Five Year Plan has cut down the expenditure on Family Welfare Programme to-Rs. 497.36 crores.

increase the numbers of acceptors. It changed its targets, its strategies and methods of birth control but could not change the behaviour of the people which was rooted in the socio-economic conditions.

By the end of 1960's enough evidence had collected to point to the real nature of the problem. The major obstacles to the programme were shown to be :

1. the extensive and extreme poverty in the country,
2. a largely traditional agricultural economy,
3. social factors like the status of women, early marriages and importance of male children, and,
4. poor health and high death rates among young children.

The significance of these factors can be fully appreciated only when one realises that family decisions or behaviour at the microlevel can be very different from that which macro analysis would lead one to expect. The contradiction between the macro-level social phenomenon and the micro-level human behaviour raises the problem of high birth rates going hand in hand with unemployment, underemployment and excess labour force.

Micro level or family decisions regrading the size of the family have two major determinants. First, the average viable family size, which depends upon the conditions in which people live and second, the probability of survival. When the probability of survival is low, to achieve the viable family size couples usually reproduce in excess, so that even if some die, they still have children. The first three of the major obstacles mentioned earlier are determinants

of the viable family size while the last is an important reason for the surplus lives produced by the majority in India.

I. Poverty and traditional agricultural economy in India

From the planner's point of view the family planning programme was beneficial not only to the nation as a whole but also to individual families due to the smaller numbers sharing the same resources. Inherent in such logic was the assumption that each family has equal access to, at least the basic necessities of life and that they can save some resources by restricting their numbers. This assumption faces two major problems. First, access to welfare facilities depends mainly upon physical availability of these services and the social rung to which a family belongs within a given socio-economic structure. Second, the views of the people on saving money through birth control and the economic value of children is determined by the conditions in which they live and work.

(A) The problem of access to facilities are many. These facilities are mostly concentrated in urban areas and even if present, they are not easily accessible to the poor. While 80% of India's population lives in rural areas, out of a total expenditure of Rs. 4330 million on health during 1969–74, Rs. 2012.7 million (46.2 percent of the total) was spent on institutions located in urban areas. Similarly, in the field of education 38 percent of its budget was spent on universities and technical institutions (mostly urban based) while the rest was shared between rural and urban areas". Access to food and clothing also is not equal as the public distribution system for essential commodities operates only in select urban and rural areas.

Apart from this unequal distribution, the socio-economic structure in rural areas is such that those who are lower in the village hierarchy have little access to whatever facilities exist there. For example, according to the findings of a study of health behaviour of rural population, conducted in eight Indian states, inspite of the demand of services, members of the lower and backward classes either do not have the resources to go to the health institutions or they are discriminated against. The main reason for this is the disinclination on health workers to work among rural poor. They take advantage of the village structure and by serving the privileged section, win the favour of those who matter and also the freedom to neglect the rest[8].

Evidently, it is not simply a question of saving resources through birth control to buy welfare facilities. The underprivileged have to be convinced that the facilities enjoyed by others shall be made accessible to them also. In absence of this conviction they do not feel the urge to participate in any family planning programme.

(B) The factor which decides the economic value of children and people's view on saving through birth control, is primarily the living condition of the people. For almost half the population living below the poverty line, there is never enough to live on even if there are more than two earning members in the family. Their major problem is how to survive from day to day and not that of saving. This group of families consisting of the daily wage workers, the landless agricultural labourers and some marginal farmers, spend 80 percent of their percapita expenditure on

food and still do not get the minimum required calories. With the remaining 20 percent they barely manage to get their fuel, clothing and housing facilities". Hunger is the way of life for most of these families. For the first two years babies are brought up on mother's milk and eat out of her share of food. It is only for about 6–8 years that parents have to feed children, by which time they begin to help the family in small ways either by doing the household work or earning a little. A child above six therefore, is always a help at hand when the parents do not get a day's labour or they are sick, have a small baby to be looked after and also when the elder children leave to settle with their own families. In such families any exclusive expenditure on children except for food is not a significant item on the family budget. Saving through birth control therefore may not appear very logical to them. It might save them some food but increases the future risk regarding survival of the family itself. Their hand to mouth existence makes children an asset to the family–a kind of investment. From home help they grow up to join the labour force, add to the family income and provide security in the old age. It follows that the living conditions of half the population are simply not conducive to any reduction in their family size.

In the other 40 percent of the Indian population also, who live above the povery line but whose living conditions leave much to be desired the major determinants of family size are their living conditions and the means of subsistance that they have. The majority of these families live in rural areas own small or semi-medium land holdings and depend upon

agriculture for their livelihood. Inspite of the general problem (at macro level) of a growing agricultural labour force which does not get full employment, a larger family can look after itself better in this group also. This is because their mode of production continues to require a sizable manpower. If this could be mobilised from within the family, without hiring labour, it is certainly more benificial. Thus even those agricultural families who live above the poverty line but man their own land and use labour intensive techniques, the economic advantage of having more children (specially sons) may be considered more than the benefits of saving through birth control. Mamdani in the study of Punjab has come to similar conclusions[10].

Evidently then the material conditions of a large section of the Indian population act as deterrents to the acceptance of small family norms.

II. Social factors

The problem of material deprivation, inequality and mode of production are reflected in the form of social hierarchy and the consequent nagging sense of insecurity at the lower level, i.e. among the scheduled and backward castes and the minorities. Economic and social burden tend to perpetuate religious obscurantism, illiteracy and ignorance and preserve the system of early marriages and the traditional desire to have more sons. Perhaps the most important among these is the place women occupy in Indian society.

Inspite of the facts and figures projecting their rising status, majority of the women still constitute

an oppressed section which is denied adequate participation in productive activities and therefore in decision making. This is not only the result of deprivation and inequality which they share with men but also due to their special position in the society which has a stake in the exploitation of women. According to 1971 census in the rural areas, 13 percent women were in the labour force while in urban areas only 7 percent participated[11]. Apart from this poor participation, the percentage of women in the labour force has actually declined over the past decades. Even more important than their participation in work force is the nature of women's working relations. While 94 percent of working women were in unorganised sectors only 3 percent worked in organised sector. All rural women were underemployed and their wages were half that of men. In urban areas also very few were found holding positions of responsibility. Literacy rate among women was only 18.4 percent in 1971. While 40 percent of them had no defined educational level, 7.8 percent were matriculates and 1.4 percent graduates and above[11]. Maternal mortality rates among women were estimated to 5.9 per 1000 live births[12] while the death rates among female infants and 1–12 year old girls were proportionately higher. All this is primarily the result of neglect of women and not simply scarcity of health facilities.

III. High mortality among children

Infant and preschool child mortality is among the important factors which influence fertility behaviour of populations. The level of mortality with which fertility declines might set in, depends upon the

required size and sex composition of the family, which in turn is determined by the socio-economic characteristics of a society. That is why different societies have different demographic behaviours. In India infant mortality is 131 per 1000 live births in rural areas and 81 in urban areas[13] and 1–4 year death rate is 12 per 1000, 1–4 years old (estimated from sample registration data). The relationship between the probability of survival and birth rates becomes more apparent when one examine the available data on rural statistics for 1969.

States	Infant mortality	Crude birth rate	Total fertility rate
1. U.P.	178.7	45.6	7.01
2. Rajasthan	168.8	44.0	6.98
3. Gujarat	165.2	42.3	5.98
4. Assam	129.5	40.8	5.08
5. Andhra	128.9	35.4	4.93
6. Tamil Nadu	112.5	33.8	4.40
7. Karnataka	109.6	34.1	4.68
8. Maharashtra	106.9	32.9	4.59
9. J & K	102.9	39.5	5.81
10. Punjab	97.6	33.6	5.65
11. Kerala	56.8	31.1	4.26

Source–Reference No. 14

Statistical analysis of this data shows a strong positive correlation between infant mortality and indices of fertility. Sixty to sixtyfive percent of the variations in fertility indicators could be explained by infant mortality rates[14].

The impact of infant mortality on fertility behaviour becomes still more apparent when differential mortality

and fertility of various socio-economic groups are examined. These indicate that although there is not much difference in the family size, because of higher death rates among poor, their birth rates tend to be higher.

The significant role of infant and child mortality in changing fertility behaviour impells us to look into their causes and find out why these rates remain so high. Data from model registration scheme shows that 53.7 percent infant deaths are caused by diseases of infancy which are either untreatable or require very high standards of medical care. Of the remaining, except for tetanus which caused 6.5 percent deaths, other deaths were caused mainly by diseases for which no simple preventive techniques are available[11]. These conditions were diarrhoea, pneumonia and malnutrition for which though curative measures are possible, they are beyond the means of our rural health services. For lowering infant and preschool child deaths then, while the primary requirement is improved living conditions–clean water, adequate food and proper dwellings health services can help by providing immunisations, natal and curative services and by strengthening programmes for the control of communicable diseases.

It can be concluded then that objective conditions of different groups determine the number of children they have and these conditions are not conducive to voluntary reduction of family size in a large section of the Indian society. If people have to be motivated to accept the small family norm, then, efforts to provide them the basic amenities of life must be intensified. Without this even if success is achieved

in controlling populations with the given socio-economic frame inequality and poverty will remain. If all appreciate this, then *it is a matter of understanding the problems of populations and not the population problem.* Since the problem is not of numbers of men and women but of the socio-economic and political formations which they built around themselves.

As commodities, prescription drugs behave differently from most other items : they are products that ultimate consumer rarely selects for himself. The producer's sales efforts are directed at the " instrumental consumer ", the doctor who prescribes but does not pay for the product..Physicians receive their most intensive in-service from agents of the chemical industry.

Ivan Illich, in ' Limits to Medicine '

7

The Drug Industry - An Analysis

A. R. Phadke

IN ORDER to understand as to why drugs are so costly, it is necessary to understand the structure of the drug industry which embodies all the essential features of the industrial economy of India. Thus like in cases of any other industry, profit orientation, monopolization, penetration of multinational corporations, complementary role of the public sector figure as the essential features of the drug industry.

Production for profit

The drug industry like any other industry, produces only to the extent that drug can be sold at a *reasonable profit* in the market, irrespective of the needs of the people. The majority of our population is very poor. It is precisely this poor

section which requires more medical attention and hence larger quantities of drugs. But since these people do not have money to buy the drugs the industry simply neglects this section of the populace. If we take the minimum necessary diet as one which provides 2700 calories and 55 gms. of protein per day, as advised by the ICMR, then such a diet used to cost at 1967-68 prices Rs. 32 and Rs. 45 per month per head in rural and urban India respectively.[1] In India in 1967–68, 40% of the rural and 50% of the urban population was below this bread–line which makes no provision for anything else than two meals a day. Things have become still worse then, and the official sources admit this. Because of this unbelievable and appalling poverty, majority of our population cannot buy even a fraction of the medicines they need. The per capita consumption of drugs in India is only Rs. 5 per year! This is only an average. The breakdown of this average reveals the great inequality in the ability to buy drugs. Thus in 1973, 80% of the drugs sold in India were bought by 20% of the population, whereas the rest of the poor population shared amongst themselves only 20% of the drugs sold in the market.[2] This happens because the logic of the present day society is such that production is geared to the **demand** in the market irrespective of the **needs** of the people.

Monopoly and underutilization of capacities

Like any other industry, the pharmaceutical industry is also highly monopolized one. In 1973, out of Rs. 370 crores of drugs produced by 2300 drug manufacturing companies in India, Rs. 296 crores of drugs were produced by 110 giant monopoly firms.

Thus 4% of the firms produced 80% of the drugs produced in India. Out of these 110 giant firms, 28 (i.e. 1.2% of the total number of firms in India) are foreign owned and account for 40% of production in India.

All these giant firms can produce drugs on a very large scale at a very cheap rate because the cost of production can be reduced because of the advantageous effects of the *economies of scale*. But this technical possibility is not brought into practice because the aim of these companies is not that of producing large amount of drugs at a cheaper rate but to produce drugs for sale in the market to get higher profits. The productive capacity of these firms is used only to the extent that production can be sold in the market at a *reasonable* profit. Since majority of our population is too poor to buy drugs, a large part of the installed capacity of these firms remains unutilized. "In many cases, installed capacities are far below the licensed capacities, and the actual utilization is only 12% of the installed capacity for anti-leprosy drugs, about 14% for Thiacetazone (an anti–TB drug), 13% for Amidopyrin, 9% for Vit. D_2+D_4...."[3]. These are not the isolated examples. Thus a study published in the Economic Times showed that, in 1967, out of 58 units studied, 36 units had utilized capacity below 50%[4].

Because of the tremendous monopolization, these handful of firms can collaborate amongst themselves and decide to restrict production, thereby creating relative scarcity of drugs in the market leading to a rise in prices. More profits can be obtained by selling drugs at a higher price to a fewer number of

customers than by selling drugs at lower prices to a larger number of people. The graphs and curves of *profit maximization* tell the monopolist, as to how much to produce in order to get maximum profits.

Another disadvantage of the monopolization of the decision-making process is that the selling prices of drugs do not correspond to their cost of production. According to the study mentioned above, the bulk-selling price of Chloramphenicol was three times its production cost, that of Tetracycline was 2.7 times its production cost. The retail price is also much higher than the bulk price. Thus in case of Chloramphenicol, the bulk-selling price was Rs. 400 per kg.; whereas its retail price amounted to Rs. 3050 per kg.! Similarly, in case of Vit. B_{12}, the retail price was 20 times the bulkselling price, for Vit. C, Folic acid, and Tetracycline the corresponding figures were 5, 9.2, and 4.5 respectively.[3]

Role of multinational corporations

As stated earlier, there are 28 foreign drug companies in India, which though numerically speaking are only 1.2% of the drug firms in India, account for 40% of the production of drugs in India. Most of the research and hence discoveries occur in the Europe and the U.S. It would be expected, therefore, that these European and American companies would be the vehicles for the spread of technological knowhow to developing countries like India. But experience so far tells us a different story. Thus these foreign companies took years to start production in India of those drugs which were discovered and commercialized in Europe and America. The table given below shows the time elapsed between

commercialization of drugs abroad and the production of these drugs in India[4]. It cannot be argued that technically qualified people are lacking in India and therefore production of these drugs could not start earlier in India. Complex sera and vaccines which are quite difficult to produce, have been produced in the public health laboratories set by the government and their production has even been exported.

Name of the drug	Year of production abroad	Year of production in India
Sulphadiazine	1940	1955
Sulphathiazole	1939	1955
Tolbutamide	1956	1960
Penicillin G	1941	1955
Ampicillin	1961	Not produced
Streptomycin	1947	1963
Chloramphenicol	1948	1957
Prednisolone	1956	1963

Out of 138 drugs listed as major pharmaceutical innovations from 1950 to 1967, only 20 were being manufactured in India in 1973. Because these foreign monopolies want to keep their technological superiority, they are reluctant to start production in India.

In spite of the tremendous amount of technological knowhow and finance they possess, they have not been beneficial to our poor consumers. Many times they sell their products at extraordinarily high prices. Thus Librium was introduced into the Indian market at more than Rs. 5555 per kg. by a Swiss firm, while a Delhi-based firm could import it at Rs. 312 per kg.

Another foreign subsidiary was charging Rs. 60,000 per kg. for Dexamethasone, which was reduced to Rs. 16,000 per kg. on threats and pressure by the controller of the imports[8]. The usual practice is that the subsidiary of multinational firm *buys* the penultimate product from its parent company abroad at a fantastically high price and converts this penultimate product to the final product in India, stamps it as *Made in India* and sells it at high price.

Thus we see that these foreign companies have not helped the Indian consumers in terms of prices of drugs or in terms of fruits of technological advances made abroad. The aim of production and research in India or abroad remains that of maximizing profits.

Role of public sector

The public sector has not been able to effectively curb the fraudulent practices of the private companies. Many times its activity is complementary to that of the private sector. Thus for example, though the cost of production of injection Streptomycin at the Hindustan Antibiotics Ltd.—a public sector unit, was Rs. 345 per kg. it was sold to the private firms in a bulk-form at Rs. 195 per kg. This means a loss of Rs. 150 per kg.[9] The private firms just bottle this injection in one gm.-bottles and sell them in the market at *reasonable profit*. It is perfectly possible for the H. A. Ltd. to bottle all their production for retail sale. However for apparently no reason, only a part of their bulk production is bottled in their own factory, the rest being sold to the private firms at a loss! Another public sector unit sold 54% of its bulk production in 1974 to private firms[7]. The public sector produced 36% of bulk-production of drugs, but

only 8% of the formulations in 1972-73. In other sectors of the industry, the public sector acts in a similar way —helping the private sector by providing cheap semi-finished products. The drug industry is an exempt from this general pattern. The public sector units are financed by the government from its income which comes mainly from indirect taxes. But this money collected from the people ultimately helps a few giant firms.

Power to the people

Due to the fantastic amount of development in the pharmacology and chemical engineering in recent years, it is now **technically** possible to provide cheap drugs on a large scale for the needy poor. Even a very brief analysis like one given above shows that the **social organisation** of our economy, however, is such that the aim of production **necessarily** becomes that of procuring higher profits. Due to the objective laws of motion of our profit-oriented economy productive capacities are suppressed. This occurs because only a handful of people own the fruits of labour of thousands of workers and scientists. Producer do not have the right to decide as to how much to produce for what purpose. They do not control the products of their labour, but the owners of these firms own these products. The production is being more and more socialized, but it is appropriated by a handful of people who own these firms. Unless the people who produce, directly control the products of their labour, unless power directly passes into their hands, the present state of affairs is inevitably going to continue.

To the poor man God dare not appear except in the form of bread and the promise of work. Grinding pauperism cannot lead to anything else than moral degradation. Every human being has a right to live and therefore to find the wherewithal to feed himself.

Mahatma Gandhi, In 'Economic Thoughts'.

8

Nutritional Problem in India

Narendra Singh

AN AVERAGE Indian's diet is deficient in proteins, calories, minerals and vitamins. Malnutrition is extensively prevalent among the majority of the Indian children, 80 percent of whom live in the villages which number about 600,000. According to the surveys of the Indian Council of Medical Research (ICMR), of the total 67 million rural children (1–5 year, 1971 census) 50 million suffer from moderate to severe malnutrition. The experts point out that, apart from causing ill-health, the prevalent malnutrition imposes serious economic burden on the nation due to child wastage and decreasing productivity. They have been arguing for appropriate investment in malnutrition preventing measures—an investment to yield rich

dividends in overall economic progress of the country. As a result, besides forceful resolutions and weighty recommendations from conferences and expert committees, various programmes have now been in operation for over two decades. Inspite of periodic expression of sentiments and platitudes on the sad state of affairs, and inspite of past and present efforts, we have moved no closer to solution of the national problem of widespread, acute and accentuating malnutrition. Latest reports are that 60 percent of the Indian population has now fallen below the poverty line. Thus over 430 million people in India, belong to families with inadequate purchasing capacity even for the basic needs of life, including food and nutrition. The children of these families are inevitable, and continue to be, victims of malnutrition.

Among the major contributory factors for malnutrition, the experts enumerate poverty, large family norms, poor mental health, premature births, low birth weights of infants, poor environmental conditions, ignorance and adverse cultural practices of child rearing. This complex and comprehensive casuality list has given rise to in practical terms what have appeared before the public, as certain issues, priorities and programmes[2]. They are the subject matter of our critical evaluation in the following.

(1) Population issue : This is the most highly emphasised issue, as brought out in the National Population Policy Statement in the following words : "We are facing a population explosion of crisis dimensions which has largely diluted the fruits of economic progress that we have made over the last two decades." Is this statement valid ? Over-population is no excuse

for the food problem in India - this has been discussed in an article[3]. In it has been shown that China adequately feeds a much larger population of over 800 million with much smaller cultivable land area than India, just because its social structure facilitates an egalitarian distribution of food. Further data on other countries show that low or high population densities have really no relation with the state of development or underdevelopment of the countries. Even countries with very low density of population suffer from problems of similar nature as India. Thus we cannot attribute the malnutrition problem to the population issue as such.

The well known family planning programme approach is the operative component of the above policy statement. We now know that it is the hysteric nature of the above statement and the very great emphasis on family planning programme, which climatically led to the recent ruthlessly enforced sterilization of millions. And, of course, the victims in this case were the poor and the under-privileged people. Regarding the large family norm also, we know from common observations that the poor suffer from malnutrition and other effects of deprivation, irrespective whether they have a large or small family, or are mere single individuals. The rich never suffer from under-nutrition even with very large families. They have excess purchasing capacity rather for overnutrition and its ills. Thus we safely conclude that it is only the poverty of the poor which makes them victim of malnutrition and other effects of deprivation.

The above arguments do not minimise the importance of checking population growth rate for promoting

healthy families. But this can not be done by the current approaches. We know that even China has brought down its population growth rate to low levels, comparable to those in the industrially developed countries, only by eliminating the socio-economic factors favouring the desire for large families. Historical experience has shown that the high population growth rate can be checked only when the factors promoting the social need and individual urge for large families and sons are absent. These factors can be eliminated only when practical and appropriate socio-economic measures have been in operation for certain time to create confidence among the common people. Only then, and side by side, a sane national policy of education, facilities and practical measures for family planning is the positive approach towards effectively reducing the population growth rate in regions where it is necessary in the social interest.

(2) Ignorance : It is argued that the common masses need to be educated about food and nutrition. This is the premise for mounting programmes, of education and training to spread the knowledge about better nutrition. Such programmes have been multiplying, but with no perceptible beneficial effects on the state of nutrition of the common masses for whom they are intended. Without belittling the importance of health education, etc., one may question the validity of the malnutrition being attributed to more ignorance in India. Only till half a century back, the mothers in middle class families could give, and the present grand mothers can probably describe, the traditional recipes for pregnant and nursing women, which were not only highly nutritious but also highly

appetising. The village hakims/vaidyas could prescribe common and special diets for the weak and the convalescents.

The poor could still find different basic food materials for minimum nutrition. This was not with any modern knowledge of nutrition, but only with the empirical knowledge accumulated through the ages and the local availability of common materials. The malnutrition, wide-spread and ever-increasing, appears to be the phenomenon of the last half a century or so in India, when agriculture came to be under a growing and fast-increasing influence of the commodity production. This coupled with impoverishment of a growing number of people has put even those items beyond reach which were earlier easily available locally for adequate nutrition. One may cite the example of milk, as the latest development. In the past, ghee being the cash commodity, milk used to be processed by the local milk producing communities in the milk-economy regions, and in that process the butter-milk was abundantly available for the local children and others. And we know for nutrition this means proteins, and combined with a piece of jaggery, also calories. This is no longer available in those very regions, since fresh milk itself has become a cash commodity, being drained away for the milk processing and milk products plants, the final products of which can never reach the milk producer and other poor people just because of the high costs. The same thing has been happening in case of green and leafy vegetables, which are disappearing from the common diets leading to high incidence of the vitamins and mineral deficiency diseases.

Thus, instead of a one-sided emphasis on knowlege of modern nutrition and about nutritious foods and recipes, most serious attention is needed for really effective and practical measures to check the spread of, and to ameliorate the prevalent, malnutrition particularly among the rural people. Such measures must take into account the socio-economic processes causing malnutrition and call and act for checking and reversing the above processes. Therefore, main tasks are to remove ignorance of the common people, equally so of those interested in the fight against malnutrition, about the socio-economic processes leading to absence and drain of the traditional nutritious materials of the common dietary from the rural areas, and the factors causing accentuating poverty among the people. Efforts to remove such ignorance are the only ones to start and pave the way for the fight against malnutrition.

(3) National orientation to the agricultural policy : In this respect, priority is being called for augmentation of production of the foods like pulses, oilseeds, green leafy vegetables and milk to form part of a balanced diet, with cereals, whose production has already considerably increased. We know that pulse production has been consistently going down, while the oilseed production is suffering from wide fluctuations. This is so because both of these crops are primarily dry farming crops, and thus subject to vagaries of nature and also of the market forces. In commodity agriculture, motivated by the profit potentials, the capital intensive "green revolution" has centered for cereals in the irrigated tracts of the country and under farmers with capacity to invest

in the necessary costly inputs. Even the capital intensive, "white revolution" is following similar trends leading to milk or rather the butter-milk being eleminated from the common dietary, just as pulses or other foods, in the rural India. One wonders, how would the call for nutrition orientation in agriculture would really materialise in the present situation. The agricultural policy in practice dose not get implemented by wishful thinking and pious recommendations. Nutrition orientation in agriculture would fail to occur unless an increased production of the other food crops is effectively promoted by really practical measures. Such measures include rapid expansion of irrigation facilities widely in different regions and promotion of cultivation of pulses and other non-cereal food crops in such land by ensuring procurement price, etc. to make the net returns competitive with cereals to check the latter encroaching and displacing the non-cereal food crops. Of course such promotion would really operate only when there is confidence among the farmers in the government policies and measures resulting from experiences of positive politico-economic actions. Side-by-side, the purchasing capacity of the common people must increase to take advantage of the new production, combined with measures enforced to check the outflow of pulses without satisfing the local demands.

(4) Food conservation, processing and research and development (R&D) have formed part of the technological efforts to solve the problems of nutrition. The aims have been to check post-harvest storage and processing losses, develop methods of quality amendments and improvements, and to widen the scope of raw material resource utilisation. No doubt, there

have been significant technological advances in India in the fields of storage and processing of foods and in the fields of product processing and development, and also in the field of exploitation of new resources of raw materials. Inspite of this, in practice we have failed to materially influence the nutrition situation in favour of the common people. Being guided by the principles of market, profits and the private investment economy, the practical developments have gone, and continue going, along two lines. For technology, the emphasis has been on proliferation of capital-intensive modern industry, and for the product, the aim has been the local market, which is negligible and sophisticated consumer product-oriented, plus, the export market. As a result, the industries set up have been operating with foreign capital/technological collaboration, and usually at low capacity from shortage of raw materials and/or product demands. Glaring examples are vegetable dehydration plants, vegetable and fruits processing plants, meat and fish/prawn processing plants and the milk processing and products plants. The technology promoted for protein concentrates is being used for supporting welfare feeding programmes, which form no part of the normal production economy of the country, and most significantly and efficiently for exporting better quality, groundnut and other oilseed meals for use as animal feed elsewhere. It is obvious that the technological approaches have proved no assets to improve the nutrition of the common people in the rural and urban areas.

It is obviously necessary that, instead of fault-finding with, and making suggestions for, technological and/or management orientations, we must look at the

basic approach in the interest of the society as a whole. What should be the principle guidelines of industrial and technological approach in the area of food and nutrition? This question does need very serious attention. The two facets of this attention may comprise what should not be done and what should be done. For what should not be done, in the light of past experiences, we may have to decide against transplanting a technology and product approach from a know-all, benevolent attitude emanating from the centres of expertise, to solve the problems of the rural and urban masses. In terms of what should be done, the approach has to be comprehensive. On one hand, a scientific analysis of the socio-economic origins of poverty of the common people and the state of their malnutrition is necessary. On the other hand, a serious reorientation in our technological and industrial approach along the following lines is necessary. The main objectives of industrial approach in rural areas must be increasing employment and capital generation, and growing pressures on agriculture for increasing production: technology-wise, the approach has to be ensuring reliance on the local resources of skills, raw materials and also the capital: and product-wise, the aim has to be production of mass consumer goods, coupled with measures to ensure that the materials and products of basic needs do not get exported before the local requirements of the common people are fully satisfied. It is clear that such a technological and industrial approach for application and development would require dispersion and active involvement of the R & D personnel in the rural areas to understand and tackle the local

problems there in itself. Only then the struggles against transplants and positive programmes, as outlined in the above guidelines, may have a possibility of implementation.

(5) Feeding programmes : Mass feeding programmes on a large-scale basis were started in this country in late nineteen fifties. First were the Applied Nutrition Programmes, promoted and supported by the FAO, UNICEF and WHO in the name of improving the nutrition status and education of the general community. In the early sixties began the Supplementary Feeding Programmes for the pre-school and school-going children, involving food distribution under the agencies of CARE, WFP, etc. Lately in 1973–74, the World Bank has come into picture in a big way in what is known as the India Population Project, involving distribution of food as part of motivating the poor for small families. Evaluation of these programmes has been done at various times. We sum up here only the salient quotes from one of the authorities[4].

" An evaluation of this programme (Applied Nutrition Programme) was carried out a few years ago and the report stated that the programme had not made the expected impact in terms of its stated aims and objectives ". On the mid-day meal programmes in operation since 1962–63, having covered nearly 12 million children in 1974 and to cover 16 million by 1979, we hear " Evaluation of these programmes in some areas has shown that two of the basic objectives improvement in nutritional status and imparting nutrition education have really not been achieved". Further, a report of the monitoring of

the India Population Project in Karnataka done by the National Institute of Nutrition, is referred to as " At the end of one year after the feeding was started, evaluation of the nutritional status of the beneficiaries showed that no significant impact on growth status has been made". The India Population Project in Uttar Pradesh is reported to be in a mess due to mismanagement. (Indian Express, 11 April 1977). However, even if it was not mismanaged, the results of evaluation would not have been different from that for the Karnataka Project. On the latter is added "The real gain of the programme appeared to be related to the image of the auxilliary nurse midwife, who was concerned with the distribution of the supplement". One is unable to consider this to be a real gain, since it is merely a reflection of being an agent of benevolence, an intermediary passing on the dole, and not really earning the confidence of the people on the basis of service to them, and on one's own competence as a health worker. The significance of the latter comments becomes all the more important when the family planning machinery has recently been identified in India with forcible sterilization of the poor. One may conclude from the above that the feeding programmes have so far failed in achieving their objectives.

Faced with the failures in objectives, the experts have been suggesting various amendments for future feeding programmes, particularly the Integrated Child Development Scheme to be adopted soon. Such amendments refer to education being made a strong component greater commitment of the personnel involved, and a suitable food distribution and delivery

system, with measures to check sharing of the supplement among other family members and/or the supplement becoming a substitute for home food. The latter situation of sharing of the food supplement or its acting as a food substitute is attributed to the fact that most of the target-beneficiaries of the feeding programmes come from families below the poverty line. Inspite of conceding that the problem of malnutrition has its origins in the poverty, the feeding programmes continue to be promoted in the name of nutrition intervention programmes, with minor technical and management adjustments. The real difficulties and basic issues, being consciously or unconsciously ignored, are evidently with reference to the population targets, resources and agencies of implementation.

Population-target for nutrition programmes, if any, must cover hundreds of millions below the poverty line. That being out of question, even the latter aim of selected population with wide-spread malnutrition was finally reduced in the Fifth Plan to cover only pregnant women, lactating mothers, and preschool and school-going children. This itself is a huge number of over 65 million. However, two points emerge in this connection. The criterion of biological vulnerability diverts attention from the poor and the economic class and in practice makes little sense when the existence of this vulnerability is a product of the existence of the family itself, making irrelevant any attempt for improving an individual's nutritional status. Next, with the pre-school children (0-4 year) showing the highest mortality and morbidity, the inclusion of school children in priority groups heavily dilutes the resources,

and is apparently done because of the easy accessibility of this group to personnel, executives and the experts, and also because of its exhibitionist value for publicity. Well known is the fact that even the areas of operations are selected from the above motives. **Resources** of funds budgetted for nutrition programme show that out of Rs. 405 crores, the shares for pre-school feeding and for mid-day meals are Rs. 218 and Rs. 112 crores respectively. Thus among the vulnerable group only 10 million of the total target of 65 million may be covered. For food materials with little change in the economic conditions, most of the promoted and available food supplements (like fortified bread, Miltone, Bal-Ahar, Bal-Amat, Energy Foods and bakery products) would always remain out of the reach of the poor. Thus the present investment in feeding programmes is actually a boon for the new food industry, rising under foreign sponsorship and collaborations. The **infra-structure** at the village level, and various other government agencies involved, are found to be incapable of efficiently carrying out the national nutrition programmes. Even at present, the implementation of almost all programmes is in the hands of CARE, a foreign agency of the USA. We must also focus attention on the fact that most of these welfare programmes are, for scope of coverage, resources, and nature of technology and industry, heavily dependent on the aid assistance of foreign organisations and very much subject to their monitoring, evaluation, determination and control.

It must be recognised that even if the various drawbacks of resources and organisation are overcome any feasible nutrition programmes can function only

as temporary relief measure. In practical operations, the programmes for the broad vulnerable groups fail to serve any positive and permanent social purposes what-so-ever. Instead, they lead to nurturing the socially harmful benevolence-gratitude relationship, and are even politically dangerous because of direct involvement of foreign organisations and agencies. No welfare feeding programmes can be sound and worthwhile unless, being independent of foreign influence of any sort, they are self-reliant totally on local national resources of funds, man power and raw materials. In the present situation, inspite of drawbacks of the midday meals, they appear to be the only practical and feasible programmes. But based on an approach of nineteen thirties in some schools in UP and elsewhere, they should make use of the existing resources to the maximum extent possible and with minimum additional inputs. This consists of providing locally school prepared foods/snacks, based on local traditional materials, instead of processed ones.

Overview

The genesis of feeding and other welfare programmes for nutritional uplift of the Indian people is in the corridors of the international agencies of the United Nations and other organisations, and in discussions in international conferences. Any deliberations on world hunger and food scarcity bring India into focus and deliberately avoid references to China. For the problems in India, the reasons are attributed to the cultural background, traditions and soaring population. The 'Well-wishers' then oblige, and start talking and organising aid and assistance programmes, in the name of philip to local social and economic

development. The latter never occur, as we know from experience. But what continues is food aid, and the supply of surplus grain and other products at exhorbitant prices, and all of them at a political cost. A section of Indian population, the educated affluent and elite, is over-whelmed, and also benefitted, by this generosity. They take upon themselves the responsibility of popularising the sponsored and promoted ideas and for implementing the same in well-publicised and public-financed programmes. The results are obvious that we are nowhere closer to solution of the problem of nutrition in the country. The basic reason of poverty, which has only accentuated during the ongoing socio-economic process of exploitation, is identified but always glossed over in practical and emphasised approaches. In the above, the approaches in vogue are analysed and an attempt is made to give some constructive suggestions. However, the most dominant theme in the analysis is that a lasting improvement in nutritional status is a function of total socio-economic development which must occur simultaneously and form the backbone of any nutriton programme policy for the common people.

The inheritors of the hungry world of tomorrow are not going to find enough calories to get kwashiorkor.

D. S. McLaren

9

The Myth of the Protein Gap

Kamala S. JayaRao

CHILDREN below 5 years of age constitute about 16% of India's total population. Tragically, they account for 40% of the total deaths in the country compared to a figure of 4% in the affluent West. This high death rate is due to malnutrition, infections and lack of proper medical care. In fact, malnutrition particularly among pre-school children, is a pressing health problem in the developing countries; by preschool children I mean those between 1 and 5 years of age.

The commonest nutritional disorder in preschool children is protein-calorie malnutrition (PCM). It is estimated that nearly 70–80% of the preschool children in our country suffer from varying degrees of PCM. Since this is a period of rapid growth, PCM leads to

growth retardation. Thus 70–80% of the children are underweight and underheight for their age. We may not recognize this, because it involves such a vast number of the children in the community that we consequently consider their body stature to be normal. Of these children, about 2–3% suffer from severe degrees of PCM which manifest clinically as kwashiorkor or marasmus, with marasmic children always outnumbering those with kwashiorkor. This would mean that with the current preschool child population of about 115 million, nearly 3 million children may suffer from kwashiorkor or marasmus, at any given point of time.

I will not give any detailed description of the clinical features of kwashiorkor and marasmus, but I will mention the salient features. In both conditions there is severe growth retardation. The marasmic child is emaciated, has practically no subcutaneous fat and has muscle wasting. The child with kwashiorkor also has varying degrees of these features but has additionally oedema and in most cases a fatty infiltration of the liver.

It was always believed that the important aetiological difference between these two conditions is the difference in the quality and quantity of food eaten. To quote from certain popular text-books, "Marasmus is due to a continued restriction of both dietary energy and protein, as well as other nutrients. At the other end is kwashiorkor, due to a quantitative and qualitative deficiency of protein, but in which energy intake may be adequate"[1]. Nelson[2] states, "kwashiorkor is a clinical syndrome which results from a **severe dificiency of protein,** with adequate or almost adequate caloric

intake".† In fact many of these texthooks use the terms kwashiorkor and protein malnutrition, synonymously. Everybody believed this to be true, for valid reasons which I will not go into now.

In 1962 the joint FAO/WHO expert committee on nutrition proposed that, "extensive revision be made in the listings of nutritional diseases, in keeping with the advances in the understanding of these conditions. It is believed that **placing the emphasis on the nutrient** would be of the greatest usefulness." Hence they adopted the term protein-calorie deficiency to include kwashiorkor and marasmus. Though this implied that there is protein deficiency as well as calorie deficiency in both conditions, surprisingly nutritionists continued to dissociate the dietary actiologies.

Recent studies conducted in various regions of India challenge the concept that kwashiorkor is due to a primary deficiency of proteins[3]. I have tried to depict these data in the following Table.

Percentage of Preschool Children With Calorie and/or Protein Deficiencies

	Protein adequate	Protein deficient	Total
Calories adequate	8	0	8
Calories deficient	57	35	92
Total..	65	35	100

This shows that :

(1) 92% of our children get inadequate calories.

(2) 35% alone are protein deficient.

†The emphasis in bold letters in all cases is mine and not that of the original author.

(3) All those who are protein deficient, also have calorie deficiency.

(4) There is no child getting **enough calories but not enough protein** (middle column, top figure).

The problem therefore is mainly inadequate food intake and not predominantly due to eating enough amounts of a wrong diet. It is, therefore, as Dr. Gopalan[4] puts it, not a "protein gap" but a "food gap". This does not mean that the earlier theories are totally wrong; there could be situations where they may operate which I do not wish to elaborate upon now. However, for our country the present finding is the most relevant. This has been found to be true of some other countries also[5].

The most important need of the body is energy, that is calories. If energy is not avilable from carbohydrates and fats, proteins will be burnt up as energy. Therefore, since calories are deficient in the diets of our children, some of the proteins will be used up as energy. Thus a condition of secondary protein deficiency is created.

Some of you, by now, might be considering all this a mere academic exercise. You may say, how does it matter whether calorie deficiency is important, or protein deficiency; the important thing is that the children need more food. Your second statement is correct but not your first. These facts are important for the treatment of PCM, and more importantly, in the planning of its prevention. I will proceed to show you how. The following Table shows how much energy and protein are needed by preschool children and, how much a child consums on an average every day.

Daily Calorie and Protein Intake of Rural Preschool Children

	Calorie intake	Protein intake (g)	Calorie requirement	Protein requirement (g)
2–3 yr.	860	21	1200	18
4–5 yr.	900	20	1200	22

This shows that whereas the average calorie deficit is nearly 25%, protein deficiency is marginal. The term average denotes that in nearly half of these children the deficit is more than 25%. In fact, about 10% of the children get only half the food they should normally consume. Even in the total population (including adults) nearly 30% of the rural population and 45% of the urban population cannot afford to meet their calorie requirements[6].

Indian diets are predominantly based on cereals mostly rice, wheat and jowar. The popular belief that cereals are merely starchy foods is not true. They supply anywhere from 6–10% protein and are the main source of proteins in Indian dietaries. The 900 calories and 22 gm protein consumed by these children were therefore, derived mostly from a single cereal and very little dal. Suppose the child continued to receive only this spartan diet, but in amounts to provide the required 1200 calories. The child would then receive about 86 gm more cereal and at least 5 gm extra protein. Thus the protein intake, without any special effort increases to 27–30 gm. Even accepting that cereal and pulse proteins are not as good as milk or egg protein, there will still be enough protein

to meet the body's requirements. In fact, children given a food supplement to provide 300 additional calories but only 3 gm extra protein were found to have an improvement in growth'.

On the other hand, what if we provide protein-rich foods like milk powder, eggs and fish to the child ? As mentioned earlier, as long as energy is limiting protein would be used up as energy. Therefore, as long as the caloric deficit is not made up, these expensive foods will not bring about the desired effect. To provide the needed calories by these foods is a wasteful expenditure, which neither our country nor any other developing country can afford. Our production of milk, poultry and sea food is much less than that of the cereals and pulses. Therefore, if we place a priority on these foods, they would have to be imported in bulk quantities. There are countries in this world which produce more milk than they can consume. It is such interested parties who want to perpetuate the myth of protein malnutrition, trying to export their produce to the developing countries. It is also similar vested interests which talk about the inferior quality of vegetable proteins and the need for amino acid fortification. The point to remember is that the top priority is to increase food production and that there in no need to **import or manufacture** protein-rich foods. The propaganda carried on through the advertising media to feed infants with " protein-rich, pre-cooked cereal foods" is also part of this game.

This discussion may raise two important questions :

(1) is there no need for animal foods in the diets of the children ?

(2) is caloric deficiency the only problem and is there

no other nutritional deficiency ?

Caloric deficiency is not the only problem. There are, besides, the problems of vitamin A deficiency, nutritional anaemias, vitamin B-complex deficiency, to name a few. But the caloric gap is a problem of immense dimensions that is vital to the economic development of the country.

Inclusion of animal foods in the diet is no doubt beneficial. Animal proteins are superior to vegetable proteins and animal foods provide other essential nutrients also. However, providing animal foods as energy is a wasteful expenditure which the country can ill-afford. Moreover our production of animal foods lags far behind our requirements, whereas the cereal production can be comparatively easily augmented to meet the country's requirements (This does not take into account the socio-economic inequalities which govern food availability. But this gap would be wider for animal foods). If we were to place a priority on animal foods or any "protein-rich" food, we would have to increase our food imports for a long time to come. It is hence that the National Institute of Nutrition (Hyderabad) is trying to show those who are directly responsible for our food and nutrition policy, how :

(1) There is no primary protein malnutrition even among children,

(2) manufacturing protein rich foods without trying to bridge the calorie gap would be a wasteful expenditure.

(3) the immediate practical step is to see that more cereals and pulses are made available.

I did take the tonic, Sir ! But had to starve for days to buy it.

10

Tonics : How Much an Economic Waste

Kamala S. JayaRao

AMONG the pharmaceutical preparations that are indiscriminately prescribed are the vitamins, particularly those of the B-complex group. "Probably no single class of drugs *(Sic)* has been the target of as much quackery, misunderstanding, misrepresentation and misuse as the vitamins....."[1]. There are however a number of reasons for this, some in my opinion condonable.

Patients often come with vague symptoms which can be correlated to no known disease. The complaints may be genuine or psychosomatic, but the patient expects treatment. For example, a common complaint is pain in the back or pulling sensation in the legs. Or, it may be a simple complaint of general fatigue

or loss of appetite due to no organic cause. What is one to do ? One usually prescribes a multivitamin or a B–complex preparation. This may be done for three reasons. The physician may sincerely believe that vitamins will help the patient or he may feel compelled to prescribe something. Thirdly, the patient himself may demand some medicine, generally a ' tonic '. What dose a tonic mean, anyway ? In general parley it has come to mean a liquid preparation. However we do come across advertisements of 'nervous tonics' ' tonic for muscle strength ' ' for energy ' etc. This is pure baloney. One of the definition given by the Webster Dictionary for tonic is ' something that invigorates, restores stimulates or refreshes '. Could it be the generous quantity of alcohol in these preparations ?

If the physician believes that B–complex would be beneficial, even if he has no scientific evidence on therapeutic basis, he need not in my opinion be castigated. We still do not know all the metabolic functions for which one or more members of the B complex may be needed. Hence, we are probably not in a position to recognize all situations which may respond to vitamin therapy, though severe deficiencies of single vitamin have been well characterized in most cases.

The trouble arises with the dose that is prescribed. The physician should realise that in such undefined situation, the therapy is purely empirical. The burden rests on him to know whether he is prescribing the right amount, less or more. This brings us to the question of what the right amount is. Here we must differentiate between vitamins taken as nutrients to ward off deficiency and taken for therapeutic purposes,

in established deficiency. The latter dosages are not based on as careful a scientific scrutiny as the former. They are prescribed for **acute and severe**, single deficiency states like beri-beri, pellagra, keratomalacia etc. Since water–soluble vitamins are considered to be relatively innocuous, the amounts prescribed are very high, the main aim being to tide over the acute situation.

On the other hand, we have these various undefined situations which we attribute to vitamin deficiencies or anaemia. These are neither acute proven states of deficiency. If the condition is due to a nutrient deficiency, the deficiency is probably chronic and marginal or moderate in nature. Here the implication probably is that the individual is unable to meet his nutrient requirements. This is perhaps a justifiable premise since the prevalence of B–complex deficiency in our country is relatively high. According to certain surveys the prevalence rate is 5 per cent in pre-school children and 17.8% in pregnant women (assessed by the presence of angular stomatitis and glossitis)[2]. The percentage of those with less severe deficiency is expected to be higher.

What is a nutrient–requirement ? The requirement for a specific nutrient is defined as the smallest amount of that nutrient that will ensure a good state of health. This will however, vary from person to person. Therefore, nutrient requirements are set down as recommended dietary allowances (RDA). These levels are believed to 'meet the known nutritional needs of almost every healthy person.' By experimental procedures, the highest requirements in a population are assessed, some further allowances are added and the RDA for each nutrient is fixed. Thus for many individuals the

Table-I **Recommended Daily Allowances***

	Thiamine (B_1) mg	Riboflavin (B_2) mg	Nicotinic acid mg	Pyridoxine (B_6) mg	Folic acid mg	Vitamin B_{12} mcg
Man :						
Sedentary	1.2	1.3	15	—	0.1	1
Moderate	1.4	1.5	19	1.4	0.1	1
Heavy work	2.0	2.2	26	—	0.1	1
Woman :						
Sedentary	1.0	1.0	13	—	0.1	1
Moderate	1.1	1.2	15	2.0	0.1	1
Heavy work	1.5	1.7	20	—	0.1	1
Adolescents :						
13–15 yrs	1.3–1.3	1.2–1.4	14–17	1.6	0.1	0.5–1
16–18 yrs	1.1–1.5	1.2–1.7	14–21	1.8	0.1	0.5–1
Pregnancy (Second half)	1.2–1.7	1.2–1.9	15–22	2.5	0.15 0.3	1.5
Lactation	1.4–1.9	1.4–2.1	18–25	2.5	0.15	1.5

* Taken from reference 4

† Taken from: RDA of Food and Nutrition Board, U.S.A., 1968.

Table-II **Composition of some multivitamins and haematinic preparations available in India**

	1 Capsule	2 Cap.	3 5 ml	4 5 ml	5 Cap.	6 Cap.	7 [illegible]	8 [illegible]	9 [illegible]
Vitamin B_1 mg	1	2	1.0	1.6	3.0	5	1	[illegible]	25
Vitamin B_2 mg	0.5	2	0.75	0.8	1.0	2	10	[illegible]	5
Vitamin B_6 mg	0.6	1	0.15	0.8	0.5	1	5	[illegible]	2.5
Niacin mg	4	..	7	4.0	30.0	10	100	[illegible]	100
Vitamin B_{12} mcg	2	..	0.45	2.5	5.0	5	5	[illegible]	5
Folic acid mg	2	..	..	..	..	1	..	[illegible]	1
Vitamin C mg	..	50	..	..	..	50	200	[illegible]	[illegible]
Iron (Type of salt) mg	..	Sulp. 150	F.A.C. 185	Gluco. 35	..	Sulp. 200	Sulp. 45		
Vit. A I.U.	..	Timed release	350				25000		[illegible]
Vitamin D I.U.		..	90				1000		1000

Table-II (Contd.)

	10 5 ml.	11 Cap.	12 Cap.	13 Cap.	14 5 ml.	15 5 ml	16 Cap.	17 [illegible] I.M.	18 [illegible] I.M.
Vitamin B mg				..				100	100
Vitamin B_2 mg				..					..
Vitamin B_6 mg				10				27.5	25
Niacin mg				..				..	..
Vitamin B_{12} mcg	25	35	15	30	7	15	25	1000	500
Folic acid mg	2.5	2.0	2	2.5	1.75	2	2.5		
Vitamin C mg	..	200	150	100	..	..	..		
Iron (Type of salt) mg	Colloidal ox. 100	Fumarate 350	Fumarate 250	Fumarate 300	Colloidal ox. 500	Fumarate 125	Fumarate 250		
Vitamin A									
Vitamin D									

Table-I Recommended Daily Allowances*

	Thiamine (B_1) mg	Riboflavin (B_2) mg	Nicotinic acid mg	Pyridoxine† (B_6) mg	Folic acid mcg	Vitamin B_{12} mcg

RDA will be higher than their actual requirement. No person need take more than the suggested RDA. The RDA for various nutrients have been fixed by international organizations like the FAO and WHO[3] and by various national bodies including the Indian Council of Medical Research[4].

I was interested to know how some of the commonly available vitamin preparations fare when compared to the RDA suggested by the ICMR. *Table I* shows the RDA for some nutrients, for various physiological groups. For specific reasons, I have not taken the RDA for infants and children but in absolute terms these values will be less than those for adults. In *Table II*, I have presented the quantities of various vitamins purported to be present in each commercial preparation. It is however not the complete formula of the preparation. I have taken only some important vitamins into consideration. The list is by no means exhaustive. I culled them from some recent issues of the Journal of the Indian Medical Association. They are marketed by leading pharmaceutical companies.

In the process of this search, I came across an interesting or disturbing feature, depending on how you wish to perceive it. Many advertisements do not say what ingredients the preparation contains, leave alone their quantities. Many inform you that the preparation is a unique formulation of **generous** amounts of vitamins or that it is a vitalizer with **balanced** amounts of vitamin (Incidentally, IDPL is one of them). The advertisment merely proclaims the efficacy of their product in specified condition. There is one advertisment by a leading company, which reveals nothing about the formula but claims

that it is good for memory ! It contains nothing but vitamins B_1, B_6 and B_{12}. The companies are probably cocksure that the physician will rely more on their advice than on his own judgement (and they are dead right).

This lack of needed information is one of the reasons why *Table II* does not have more preparations listed. But this is ample for what I have to say. There is also no reason to belive that those which escaped inclusion would be any different.

The RDA for any nutrient is the amount which if taken regularly will ensure that a deficiency state of that nutrient will not develop. For example if a sedentary, house-wife takes 1.0 mg riboflavin daily, she is expected not to develop riboflavin deficiency. As I said earlier, 1.0 is the highest level and most can afford to live on lesser amounts. The situations which are under discussion now, are considered to be deficiency states of mild or moderate degree. The individual might have depleted levels of the nutrient and may need higher amounts than the RDA. What should this higher level be ? For acute and severe states like beri-beri or keratomalacia, text-books prescribe doses, empirically arrived at and found to bring quick relief. These are usually much higher than what would be required even for that degree of amelioration. *Table III* shows the prescribed therapeutic doses, as obtained from various standard books on nutrition and medicine.

For chronic, moderate deficiency states or for situations where vitamins are prescribed empirically, we may assume that levels much lower than the

therapeutic doses and slightly higher than the RDA should be enough. Let us be generous and double the RDA, remembering that the patient does receive a certain amount from his diet too. With this information I would like you to critically compare *Table II* with *Tables I* and *III*.

Most of the time drugs are not prescribed according to any therapeutic schedule. They are usually prescribed as ' 1 dose or 1 tablet, three times a day '. Items No. 1–4 in *Table II* are close to the RDA with respect to vitamins B_1 and B_2. Given as per the above mentioned schedule they supply 2–4 times the RDA, and it was argued above that double the RDA should be enough in moderate or doubtful deficiency states. We must also remember that when a diet is considered to be low in a nutrient, it is not totally lacking in that nutrient. The average diets of the low socio-economic groups provide 0.5 to 0.8 mg each of B_1 and B_2. Items 7 9 provide about 5–25 times the RDA in a single dose. If even such preparations are prescribed thrice a day, the intake would be 15–75 times the RDA. Item 8 in a single dose supplies thiamine in a quantity prescribed for the whole day in beri-beri ! Moreover in beri-beri it is not necessary to prescribe very large amounts of other vitamins. Thus preparations like 8 and 9 are not necessary at all.

An argument may be put forward that since water-soluble vitamins are harmless compounds there is no necessity to raise a hue and cry about the dosages prescribed. This is no doubt true but, ' such practice is economically wasteful and in some instances, causes financial hardship '[1].

It must also be remembered that water-soluble vitamins cannot be stored in large amounts unlike the fat-soluble ones. This of course is one of the factors underlying their low toxicity. 'In prescribing thiamine it should be remembered that the healthy human body contains only about 25 mg of the vitamin. Furthermore, it has no means of storing any excess taken in the diet; the excess is lost rapidly in the urine. The human body is certainly an effective machine for dissolving thiamine pills and transferring the solution to the urinal'[6]. Moreover it has been shown, atleast for riboflavin that intestinal absorption is limithd by saturability and that higher the dose, smaller the fraction absorbed. This is no case in favour of parenteral administration either, because higher the amount in circulation greater the excretion in urine.

Thus, most of the 'high-potency' or 'Forte' preparations of multivitamins are a sheer economic waste. It is a drain on the patients' purse and the onus is on the doctor because he is making the patient buy a specific preparation. If bought by government or public sector dispensaries, it is a national waste. If preparations with smaller and yet adequate quantities were bought, for the same money more tablets could be purchased and a greater number of patients benefitted. Manufacture of such 'high-potency' preparations must also use up an unnecessary amount of the scarce foreign exchange resources, since quite a few, and probably all vitamins (raw materials) are imported.

Thus it is not proper if one merely prescribes B-complex tablets and avoids brand name because he

is a 'conscientious objector' to brand names. As long as there is no uniformity in the dosage employed in various preparations, it is necessary to know which brand supplies or claims to supply requisite quantities of vitamins. Also, there is no need to blindly follow

Table-III

Suggested doses of vitamins for single, acute and severe deficiency

Condition	Vitamin	Dose (Oral)
Beri-Beri	B_1	10-25 mg bid or tds
Riboflavin deficiency	B_2	5-10 mg
megaloblastic anaemia	Folic acid	5-10 mg
	B_{12}	5-10 mg
megaloblastic anaemia of pregnancy	Folic acid	10 mg
Corneal xerosis		
Bitot's spots	Vitamin A	5000-10,000 I.U.
Rickets	Vitamin D	1000- 5,000 I.U.

the 'one t.d.s.' schedule. How much and how frequently, should be decided on the merits of the case.

I also wish to draw your attention to one or two additional points. There is a widely held belief that a combination of vitamins B_1, B_6 and B_{12} is good for neuropathies and other nervous disorders. I don't think this is based on any solid therapeutic evidence. The reason the three are combined, I think is because each one has been shown to be effective in a specific disorder of the nervous system. Hence

the triad is used as a shot-gun therapy, indiscriminately. In fact, the brand names of certain such preparations incorporate Greek terms like 'encephalo', 'neuro' etc. The manufacturers of one preparation even claim its efficacy in improving memory.

'It (thiamine) may be given, though **without expectation of dramatic results,** in cases of nutritional neuropathy. There is no reliable evidence that it is useful in any other disorder of the nervous system. The prescription of synthetic thiamine, **either alone or in combination with other vitamins, as a general tonic or appetiser,** is supported by no scientific evidence and is now discredited.'[5]

'Vitamin therapy is often given to patients with polyneuropathy, although it is clear that polyneuropathy is not due to deficiency of vitamin B_1, B_{12} or any other known vitamin. Such treatment has a placebo value and probably no other, but is not to be decried....'[5].

For Reasons mentioned right at the beginning, I too do not decry the use of the combination as I do the dosage in such preparations. Items 17 and 18 in *Table-II* are two classical examples. Both are meant for parenteral use, another characteristic of this triple combination, probably because of the presence of vitamin B_{12}. The conventional prescription by physicians for parenteral B-complex is '2 ml I.M. once a day or once on alternate days'. Assuming the patient receives 6 ml in a week, he is given 600 mcg to 2 mg of vitamin B_{12}! What a colossal waste considering that vitamin B_{12} is an expensive substance. The prescribed dose even for pernicious anaemia is 2 mg weekly. Those who may

argue that unlike the other B-complex vitamins, vitamin B_{12} is stored to a certain extent in the body may note that with each 1 ml goes 20–33 mg thiamine.

Many of the oral preparations too contain unnecessarily high amounts of B_{12}. The RDA for this vitamin is 1.0 mcg and in pregnancy and lactation, 1.5 mcg. Even conceding that a majority of the population cannot afford animal foods and hence many may suffer from vitamin B_{12} deficiency, I see no reason why any preparation should contain more than 2 mcg and at the most 5 mcg vitamin B_{12}. This criteria is met by only 7 of the 16 oral preparations listed. If the preparations are haematinics combined with iron, they have to be prescribed three times a day. In which case the preparation should not contain more than 2 mcg B_{12}. Items 10–13, 15 and 16 must be very expensive and those who really suffer from B_{12} deficiency can ill-afford them. I also wish you to note that mixed haematinics-iron preparation containing vitamins and minerals, are condemned by authorities in the field of anaemia. "Recovery of the patient with uncomplicated iron-deficiency anaemia is not helped by vitamin supplements or minerals"[7]. In our experience vitamin B_{12} and folic acid are not needed till hemoglobin levels come upto 11 gms. % or more.

Let us now consider the vitamin A content of these preparations. The prescribed dose of vitamin A for corneal xerosis and Bitot's spots is 1500–3000 /ug (5000–10,000 I.U.) daily[8,9]. The RDA during lactation, the maximum suggested for any group, is 3500 I.U. Notice the vitamin A content of items 7 and 9. Who needs **25,000** I.U. vitamin A daily ?

Severe cases of deficiency like keratomalacia are not to be treated with oral preparations[9,10]. Those who really develop xerosis can never afford a pharmaceutical like 7 or 9, whose price is further raised due to presence of other nutrients. Imagine to what extent the price can be reduced simply by bringing down the vitamin A content, even to 5000 I.U., which itself is a high amount.

Then, there is the practice of adding glycerophosphates to liquid, multivitamin preparations. I do not know of what therapeutic value these compounds are. They are not mentioned in any standard textbook of pharmacology and therapeutics. As far as I know (see any pharmacopea) they only form basic ingredients of syrups, possibly for flavour. However, a widespread misunderstanding is that they are 'energy givers' or 'tonics'. Some brand names carry a prefix or suffix of 'phospho' and the advertisement says 'energy givers', 'vitalizer' etc. This in my opinion is a fraud perpetuated by the drug companies and worse still, an unpardonable ignorance on the part of the doctor. The vitamins atleast, despite the excess and the wastage, do some good. I see no nutritive or therapeutic value for the glycerophosphates. Their presence is needed for syrup preparation but its name should not be included in the brand name and no claims should be made for its therapeutic efficacies.

One of the nutrients commonly added to multivitamin preparation is iron. Witness that out of the 16 listed items, only 4 do not contain iron. It is well-known that ferrous compounds are better absorbed than the ferric, and it is heartening to note that

most are ferrous salts. A perplexing form is the colloidal iron oxide (item 11 and 14) which finds no mention in any book on pharmacology or iron metabolism. Since it is a colloidal preparation I doubt if the iron in it is easily available to the body.

Of the various ferrous salts, ferous sulphate is the least expensive and should be the treatment of choice, yet only 3 preparations contain it. It is said that contrary to popular thinking and claims, gastrointestinal intolerance to iron preparations depends on the **total amount of elemental iron** in the gut and on psychological factors; it is **not a function of the form in which iron** is administered.[1,7] Thus claims made for compounds other than ferrous sulphate, of increased tolerance or decreased toxicity, are not genuine. Also, sustained – release (timed–release) compounds (no. 2) take the compound beyond the duodenum and proximal jejunum and thus reduce iron absorption. Therefore it is wasteful to prescribe such preparations.

The RDA for iron ranges from 20–40 mg per day depending on age, sex, physiological state etc. This of course is for food iron and for free inorganic salts would be less. The therapeutic dose, on the other hand, is 60 mg elemental iron, thrice a day. Ferrous sulphate, fumarate and gluconate contain 20%, 33% and 12% elemental iron respectively. Items 11-13 and 16 are probably meant for iron deficiency anaemia. Prescribed twice a day they supply 250–350 mg elemental iron which is higher than the therapeutic dose. Thus taken, 13 supplies 150 mcg Vitamin B_{12}. On the other hand, no. 7 supplies only 8 mg elemental iron per capsule. One may argue

that this may be used as for prophylaxis and not treatment. Have a second look and tell me the situation where in an individual is **grossly deficient** in every vitamin one can think of and is yet not deficient in iron? This is a pure commercial gimmick to claim haematinic value for the preparation. As early as 1936 Strauss said "shot-gun therapy is to be deplored for a number of reasons. Most mixtures of substances **fail to contain enough of any one ingredient to give maximal effects.** The patient must pay not only for the material he needs but also for the non-essentials" (cited from ref. 1).

One can go on endlessly in this manner. My intention in writing this is to bring to the notice of the readers the fact that all multivitamin and haematinic preparations are not same.

1. There is no uniformity in dosage employed.
2. There is no authority to lay down criteria for dosages.
3. There is no authority to check whether the claimed doses are actually present.
4. Doctors prescribe these preparations with total ignorance of or indifference to principles of nutrition and therapeutics.
5. High-potency preparations should be available separately for single vitamins. Multivitamins need not contain amounts much higher than RDA. They are economically wasteful.
6. The false claims made for improvement of unspecified and unproven conditions are perpetuated due to the ignorance or compliance of the doctors.

7. Most of the companies have foreign collaboration. Most of the raw ingredients are to be imported. Could this be one of the reasons for the high dosages employed?

I am sure you will find asking yourself many more such questions.

Things are seldom what they seem,
Skim milk masquerades as cream.
W. S. Gilbert

11

Dairy Research for Whom?

Narendra Singh

SCIENCE and technology continue to be emphasised as essential factors for development. In the area of food, their application finds reflection in commodity-oriented developments in agriculture and in processing industries. Adverse implications of such developments continue arising in the prevailing socio-economic and political situations. Despite this, the experts go on projecting policies and programmes for improvements. Exposing the implications remains, therefore, a continuing task. Among the more relevant cases, some of the obvious ones are the green revolution through input-intensive high yielding cereals, introduction of technological raw materials like soyabean, promotion of processed protein foods to fight malnutrition, emphasis on dairy development, etc. etc.

The focus of our study here is a 'white revolution' as projected to be induced through intensive dairy development.

In the background of this study is the highly publicised 'Operation Flood', Rs. 100 crores project launched under the newly formed National Dairy Development Corporation in 1970. This project has been sponsored by the international agencies like UNICEF, diverting through the World Food Aid Programme thousands of tons of butter oil and skim milk powder, the surplus of late sixties, from Europe. Now, the World Bank is also sponsoring a Rs. 5 crores intensive dairy development project in Karnataka. Then in its recent negotiations with the European community, the Indian Government has acclaimed its achievement of getting butter oil, still a surplus commodity. Of interest is the omission of milk powder this time, probably no more surplus in Europe with the soyameal prices soaring high.

Development Projections and Reports

The experts have projected the fancy that a flood of imported milk products would set a sequence developments, dramatically increasing the production and ultimately creating a self-sufficiency, figuratively a flood of milk, in the country by 1980. Usual modernisation is aimed at with measures for improvements in dairy plants and in cattle for better yields and quality, for various services and incentives, for setting up feed processing plants, and for creating an economic squeeze on the urban milk producers forcing them to move out into the rural areas. All this is finally to lead to remarkable improvements in overall milk production and processing under efficient hygienic

conditions, accompanied with betterment of rural and urban life. Impressive indeed, but for reality one does not have to wait until 1980. Trends are obvious even in the sketchy information available on developments. Let us first refer to two reports in an international journal.

In June 1971, *Dairy Industries* reports (p. 357) : Government Dairy Bangalore, has increased its procurement to 46,000 litres with the daily sales at 43,000 litres. Its returns from butter and *ghee* were very low, and it could sell only half of its daily production of 800 kg. butter. The Dairy was already converting part of its surplus milk into curds. A major problem for the dairy was keen competition in marketing with the private producers. Now, the plans are to utilise part of the surplus of producing initially about 1,000 kg. of ice cream mix daily. With further plans for increased procurement, a farm cooler of 2,000 litres capacity has been installed at one collection centre, more are to follow, and a new 40-ton cold store is under construction.

In the same journal, one year later in May 1972 (p.270) : under UNICEF assistance, an automatic milk-vending machine, first of its kind in the country, has been installed at Baroda; and more machines were planned for other major cities to eleminate the long ques before the milk booths. A dairy plant of 12,000 litres capacity is to be set up at Patna, under a programme with provisions for supply of various technical inputs and a proposal for a 150 tons per day balanced fodder processing factory.

The Indian experts report (D. N. Khurody, *Indian Dairyman*, March 1971, p. 67) that more than 33%

of the total 2.4 million litres daily capacity is idle in the existing 61 dairy plants. Later according to the same expert (*Science Today*, September 1973), although not much information was available on the progress of the 3-year old 'Operation Flood', since then certainly more cattle have come into the cities and the imported milk products have created no economic pressure on the private traders, as promised, nor improved the urban milk supply and quality.

Overview of the Reports

A critical analysis of the reports would reveal interesting features of the development. First, let us take in nature of assistance from the UNICEF, which professes actions and programmes for the needy children. It has given an automatic milk-vending machine for trial to promote more installations, which have to be later imported from the manufacturing countries. Even in Holland, the country of milk and dairy products, such a machine is not in use, having been discarded because of unsatisfactory operating conditions of handling, refilling and servicing. Nevertheless, UNICEF assists in promotion of such machines in India, a country of wide climatic and seasonal variables, more adversely influencing the operational efficiency. And that too to reduce pressure before milk booths, when more personnel for milk distribution can only relieve pressure of unemployment. Then, such modern vending facilities can in practice be availed of only by the rich and the educated minority, as the purchasing capacity of the vast majority is so low as to keep milk beyond reach. No child really in need of better nutrition, the professed group for the UNICEF, can benefit from such installations.

Evidently self-defeating, such aid and assistance on critical analysis only goes to expose the real face of these international agencies.

On dairy plants, the central theme of these modernising ventures and development schemes, the following picture emerges. Most of the existing plants operate much below their capacity. Still the schemes and plans continue for proliferation of the plants and of high capacities. Then, remarkably the existing dairy plants have a surplus milk over their sales. Evidently this was not from a lack of needy customers, but only from a lack of those of adequate purchasing capacity. The eventual surplus was being processed into more sophisticated products, further limiting the scope of sales to increasingly narrower circles of the more affluent customers. In spite of this, expansion plans are afoot for increasing the procurement and storage capacities for the dairy plants. It is safe and reasonable to assume that the experiences would only be repetitive of the plants running below capacity and of the procured and processed milk diverted, as surplus, into products for the local elite market, small in the context of Indian population yet very large by Western standards, and for export.

Obviously the processed milk products remain beyond the means of the vast majority of the common urban masses. For the rural masses, with respect to their nutrition, health, well-being and performance, another adverse implication comes into operation, not so obvious.

Formerly fresh milk was not direct cash commodity in the vast rural hinterland. Being unstable and subject to spoilage on storage, it was either used fresh

or soon processed locally for production of *ghee*. The *ghee* was essentially the cash commodity from milk and the butter milk (*matha* or *chhachh*) was abundantly available in the rural homes, practically in flood, a very nutritious protein–cum–mineral rich food. But no more any longer with institution of efficient collection and modern storage facilities as part of the procurement machinery under the new ventures, as the fresh milk as such has become a cash commodity and is drained away from the rural people.

Real context of development promotions

In the light of the above critical analysis of the developments, the questions would naturally arise. Why all this ? Why such development programmes ? Why foreign assistance for all this ? For answers, one has to go into the real context of the development promotions. Let us begin with the foreign assistance.

In the background of the 'Operation Flood' was the great *surplus* of butter and other dairy products in the West as a consequence of *over–production* in the sixties. As we know, *surplus* and *over–production* in the capitalist economies refer, not to excess over need, but to the quantities which adversely influence the prices in the market that is essentially the profits. Burning of crops and dumping of grain into the sea have been common steps in the recent past, when the workers in USA and Europe were victims of the great depression and slump during the twenties and early thirties. Even in the fifties and sixties, when food shortage and mal and under–nutritions in different parts of the world have been slogans of grave concern in the great publicity by FAO and others, the farmers in Europe and America have kept their fields fallow

under heavy subsidy just not to grow foodgrains so that the prices and profits might not be affected. Such policies still continue, as being essential ingredients of the competitive, profit–motivated socio-economic systems promoting and manipulating markets. Now, in these pursuits new venues and new channels have come to be handy with the concentration of economic power and of technological capabilities in monopolies, giant cartels and the multinational corporations. The international agencies and other aid or relief organisations with their experts are the new subtle media, as also the local experts and the privileged groups, with the III world countries as the continuing fields of operation for further aggravated pursuits for profits in the immediate and long–term perspectives.

The World Bank assistance for dairy development in Karnataka, with an emphasis on poor peasantry, also falls in the same pattern. The dangers of worsening situations are being recognised. The recommendation of greater assistance but with the provison of the aid going straight to the poor peasant, is meant to act as a palliative for amelioration of the squalid poverty. They constitute efforts to bring down the rising starvation to 'tolerable levels' without seriously disturbing the neo–colonial economy and thereby reducing the potentially dangerous peasant poverty. But then even such plans flounder in the hands of the superbly inefficient and perverse neo-colonial administrative set–up to subserve the ruling foreign and local interests.

Dairy processing ventures had already been started sometime back in the form of private sector plants under

foreign subsidiaries, like Hindustan Lever and Glaxo. Western UP has been their seat of activity for more than a decade. The Kaira Dairy in Gujarat, well known for its Amul Brand (butter, cheese and baby food) among the affluent customers, has been expanding with foreign assistance, particularly UNICEF, etc. As mentioned earlier, the latest project ' Operation Flood ' is merely a legacy of the then Butter Mountains of sixities in Europe and America. But this time following in the foot-steps of other ventures, it is a more grandiose plan on a national scale under public sector. Collection and procurement of milk from the rural milk producers is done in the name of efficient and hygienic urban supplies and for processing into products for wider distribution. Various promotional efforts are often projected under all such ventures, and sometimes even implemented. Any increase what so ever, in the latter case, is invariably procured by the promoters for subsequent processing and sale.

The experts, consciously or unconsciously, act as the ready media for furtherance of the vested interests. Those in India are themselves products of the western education and training. All of them look at the industrialised and technologically advanced countries as the models for progress. They are nurtured on beliefs that affluence of these countries is mere consequence of local industry, good management and proper application of science and technology, having no relation with the colonial history and the neo-colonial present. The Indian experts, already among the privileged group of the local society, continue to remain engaged in the traditional path of self-

aggrandisement, further strengthened by the Western ideals for individualism.

Beneficiaries

In practice, therefore, it is not the vast majority of the rural and urban masses who will benefit from such ventures of development, for whom they are professed to be started. The only beneficiaries of dairy or similar ventures in the prevalent socio-economic and political situation in India are the following :

Foreign monopolies and multinational corporations of the industrialised and technologically developed countries, fostering demands for new products and technology under the assistance and advice, through foreign and local experts, to create new markets in India and also for eventual exports to other markets exploiting the cheap Indian labour;

Indian business entrepreneurs subserving the foreign vested interests and getting a share of the exploits;

And the local bureaucrats, technocrats and the professional and educated elite, ideologically oriented to and promoter of the profit-motivated and capital-cum-management-technology intensive systems, transplanted from the West, and engaged in self-aggrandising pursuits, totally unconcerned with the present and future of the native society and people.

Go to the people
Live among them
Love them
Serve them
Learn from them
Start with what they know
Build upon what they have

APPENDICES

We are trying to be part of the solution,
ignoring that we are still part of the problem.

Relevance of Present System of Medical Services in India

Abhay Bang

Working paper discussed at the
First All India Meet of MFC, December, 1974

A. Need for rethinking over our relevance to society

A. 1. Are the doctors and the medical students part of the society and do they bear any social responsibility ?
- as expert professionals
- as citizens

A. 2. Typical attitude of medicos towards social, economic and political problems of country as seen in–
- Bihar movement
  strike of Junior Doctors
  migration to developed countries

A. 3. Do we owe anything to society ?

(i) Economically

- our economic resources
- investment by society in making a doctor
- expenditure for running well equipped medical colleges, hospitals, research centres

(ii) Our socio-economic status in society and the advantages we enjoy

a–Economic class we stand in (see the figures as concluded B. N. Dandekr and Neelkanth Rath from their study)[1]

b–Educational and cultural class we stand in

- how many people get education
  out of them how many get chance of university education

1. The study by Dr. B. N. Dandekar and Neelkanth Rath published in their famous work 'Piverty in India' says —

(i) Per capita average consumer expenditure in India is Rs. 276.30 per year, i. e., 75 paise per day (1960–61).

(ii) This average is fallacious. Even this meagre money is distributed in various strata of the society in the following manner :

— 63.26% of the rural population is below this average of 75 paise a day.

— 6.38% of the population (3.3 crores) survives on 22 paise a day.

— The lower strata of 40% of the rural population lives on 50 paise a day or less.

— Only 3.28% of the Indian population can spend per capita Rs. 55 per month.

— WHERE DO WE STAND in this grading ?

In this context think about our income, standard of living, our ideas and aspirations of life, cost of medical services we provide.

- out of them how few lucky ones are able to get chance of most coveted line today–medical education

c–Social class we stand in

- prestige, respect and glory associated with medical profession (see what Kipling says about our powers)[2]
- are we not an elite, previleged, enviable class ?

d–In view of this social obligation and responsibility, should we not seriously think over our relevance and usefulness to society ?

2. Kipling in his 'A Doctor's Work' says — "In all times of flood, fire, famine, plague, battle, murder and sudden death it will be required of you that you report on duty at once, and go on duty at once and that you stay on duty until your strength fails you or your conscience relieves you whichever may be the longer period.....Have you heard of any Bill for an eight hours' day for doctors ?

"You belong to the privileged classes. May I remind you of some of your privileges ? You and kings are the only people whose explanation the police will accept if you exceed the legal limit of your vehicle. On presentation of your visiting card you can pass through a most turbulent crowd unmolested and even with applause. If you fly a yellow flag over a centre of population you can turn it into a desert. If you choose to fly a Red Cross flag over a desert you can turn it into a centre of population towards which, as I have seen, men will crawl on hands and knees. You can forbid any ship to enter any port in the world. You can order whole quarters of a city to be pulled down. You can trust to the armed cooperation of the nearest troops to see that your prescriptions are properly carried out, and even the Head of the Nation has to obey you when he is under your treatment."

B. Is the present system of Medical Services relevant to India ?

A critical examination and radical rethinking is needed over these points. Are our medical education, research and health services relevant economically, socially and culturally to the Indian circumstances and needs or they are blind aping of medical services and concepts of developed Western countries ?

B. 1. Medical Education

(i) Aim–according to WHO Regional Committee for South East Asia - the purpuse of medical education is not to produce Nobel Prize winners but to provide doctors for health services who will meet the health needs of the country in which and for which they are trained.

(ii) Conditions we are trained in and working for

(iii) Conditions we actually have to work in

(iv) Need of society

– small number of highly specialized and trained doctors ?

or–large nomber of doctors with training to meet primary and basic health needs of society ?

(v) Why such disparity between needs of society and planning and direction of our medical education ?

B. 2. Research

– on what subject and problems do we need research ?

– on what subjects and problems is our research going on ?[3]

B. 3. Health Services

(a) The present set up of health services is based on–

1. Hospital with specialized, well equipped services

– how much costly ?

– how much accessible and available to all people ?

– how much human ?

– can we provide this standard and type of medical services for the whole country ?

3. Dr. A.K.N. Reddy, Professor of Electrochemistry at Bangalore in his article "Is Indian Science Truly Indian ?" says "But science in India today derives its emerging areas of research its trends, its fashions, its streams of ideas and inspiration, its experimental techniques and instruments from the West. It is looking to the West for its criteria of excellense and its source of recognisation. This westward looking character of Indian Science has become a main inhibiting factor in harnessing technology to national goals and needs."
He continues —

"The dissimilarity between the socio-economic problems of India and those of the West is sufficient to conclude that the tasks facing science and technology in India are radically different from those facing Western science and technology. In discharging these tasks science in India must assume a sufficiently distinct pattern. It would then become necessary to talk of Indian science and technology with a national character.

"In fact it is not only possible but necessary or rather viral for a country to develop a science and technology suitest to its own conditions and needs.

ii. General practioners
- distribution in population
- attitudes and aims of practice and malpractice

iii. Untrained Vaidyas, indigenous medicine practitioners, compounders and quacks.
- why people rely on them ?
- availability, cost and roots in Indian culture.

iv. Preventive and Social Medicine Services
- how much emphasis given ?
- how much effectively implemented ? (Small pox eradication and National Malaria Eradication programmes)
- what attitude clinicians have towards preventive medicine ?

(b) What approach we need ?

(1) Aim of medicine should be
- to make people to require more and more medical aid ?
- to provide them high standard of specialized medical care ?

or - to prevent the occurrence of diseases
- to educate and make them more and more self reliant and to reduce the need of medical aid to minimum ?

(2) What sort of medical services we need ? Role of

(i) Health Education

(ii) Preventive Medicine

(iii) Disseminated, easily available and practicable medical service
- How about bare footed doctors ?

- Utilisation of knowledge, experience and natural resources of Indian Medicine ?
- View of WHO Committee for South-East Asia[4]

(iv) Our research, hospital services and medical education should concentrate more on what sort of diseases ?
- Communicable diseases
  Acute illnesses
  Deficiency diseases
- Chronic diseases e.g. Chronic renal failure, Chronic obstructive air way diseases, etc. ?

Decided on the basis of
- incidence in India
- chances of cure
- social utility of diseased person
- cost involved in treatment

(v) Any rethinking about drug system ?
- over reliance on drugs by doctors
- cost of drugs and availability

4. WHO Regional Committee for South East Asia says — "Specialization has developed to an exaggerated extent in most of the countries in the Region. There is a necessity of Community Medicine. Industrialised countries spend up to 100 dollars per capita on health each year, yet in South East Asia Region, some countries have only 1 to 1.5 dollar per capita each year as their provision for health services. Therefore, every single penny must be spent carefully in order to provide the largest number of people with as many services as possible. Too often medical education has not been related to real conditions of life as the doctors find them, especially in the rural communities....Doctors and health personnel must learn Community Medicine if they are to serve the Community." WHO Chronicle, January 1973

- independent and autonomous drug industry working for its own profits
- use of advertisements
- use of naturally and easily available indigenous medicine ?

B. 4. Root causes of irrelevance of present Medical Services.

(1) Socio-economic class we belong to, and its influence on our thinking, planning and working
- our vested interests
- vested interests of the upper socio-economic class as a whole – in maintaining present system of Medical Services as they get maximum benefit out of this system.

(Big Conspiracy - can it not be said that the present system of medical services in India is big conspiracy by the politically, economically and socially influential elite class which controls the policy making and working of this system against poor, ignorant suffering masses for their own vested interest ?

See what Gunnar Myrdal says about the Educational policy in India. Does it not apply equally to system of medical services in India ?)[5]

5. Gunnar Myrdal in "The Challenge of World Poverty" —

"But there is another and more valid criticism to make. Although the declared purpose was to give priority to the increase of elementary schooling in order to raise the rate of literacy in the population, what has actually happened is that Secondary schooling has been rising much faster and tertiary schooling (University education) has increased still more rapidly.

(2) Cultural chasm

(i) Does the cultural context of a man influence his thinking ?

(ii) Is there a cultural gap between us and Indian masses ?
- standard of living
- mode of living and thinking
- language
- our ideals, dreams, sources of inspiration and our identification and aspirations

Are we Indian or Western ?

Are we not 'cultural out siders' and

He further says — "Part of the explanation of the less fortunate educational situation in the poorer countries is simply and directly their poverty. There are fewer resources . . .But the problem is more complicated.... Monopoly of education together with monopoly of ownership of land is the most fundamental basis of inequality, and it retains its hold more strongly in the poorer countries."

He quotes P.C. Mahalanobis, saying — "By and large, it is the rich people who have the opportunity of giving their children the type of education required for the posts of influence and responsibility in the country... the powers and privileges of a small group of people at the top tend to be not only preserved but strengthened....This has created an influential group of people who naturally desire to maintain their privileged position and power."

He quotes J. P. Naik, a notable educationist —"...the largest beneficiaries of our system...are the people in urban areas and the middle and upper classes...Educational development...is benefitting the 'haves' more than 'have nots'. This is a negation of social justice and proper planning."

contextless and therefore irrelevant to Indian society and circumstance ?[6]

(iii) The influence of this cultural irrelevance of ours to Indian society on the policy and working of
- Medical Education
- Research
- Health services

(iv) Is it possible to adopt a Western system of medicine in India ?
- Economically
- Culturally and socially

(See what A. K. N. Reddy says about borrowing of a technology from a society which has diffrent social and cultural set up than ours)[7]

6. Gunnar Myrdal comments - "..The young intellectuals in India and in most of the rest of the Non-Communist under-developed world have been so conditioned by the rigid elite and class structure in which they have been brought up that they do not feel that deep identification with the poor in their nation..They do not feel it even when in some countries they are radically indoctrinated. This is merely one example of the destructive influences of the fortified class society inherited from the colonial era."

7. Dr. A.K.N. Reddy - "Science and technology is like genetic material. It carries the code of the society in which it was born and sustained and tries to reproduce that society. its structure, its social values. The adoption of a capital intensive, luxury-oriented Western technology in India has thus created a dual society - metropolitan centres of Western oriented affluence amidst vast expanses of rural poverty, mass unemployment, large migration to cities and wide income disparities."

(v) Can system of medical services in India be made relevant to Indian circumstances and needs unless this schizophrenia of it – contradiction between its Western dreams, aspirations and actual Indian circumstances in which and for which it has to operate – is removed ?
Who should be changed ?
- Society should be Westernized for medical services, or,
- Medical services should be moulded according to Indian needs and circumstances ?

B. 5. What should be done : to make a relevant and useful system of medical services for India-

(1) Don't we need a radical change in approach towards medical services ? Instead of a costly, centralized, hospital-based medical services, available to few, should not we have a broad based widely available, cheaper more primary and basic medical services with more emphasis on preventive aspect ?
What chages you will suggest in :
-Medical Education
-Helth Services preventive/curative
-Attitude and approach of doctors
-Research
-Population control. " Development is best pill "

(2) Revolution
Can a revolution occur in fragments ? Can medical system be changed without change ?

in society ? If present irrelevant medical system is maintained due to
-vested interests – politoal, economic, social, mental and cultural slavery
Can it then be changed without a revolution in
- political, social, economic structure of society
-Cultural revolution

(3) What direct programme for us ?

He who will not reason, is a bigot;
he who cannot is a fool; and,
he who dares not is a slave.

SIR WILLIAM DRUMMOND

Today, if you are not confused
you are just not thinking clearly.
IRENE PETER

An Approach Towards Community Health Care

Ashvin Patel

Working paper discussed at VHC Regional Camp, Gujarat, 1977

THE paper proposes to raise the questions rather than providing information and answers.

O. Community health care[1] suggests shift from individual patient and depersonalized treatment. It presuppuses the objective of reaching the total population for its health needs.

1. Comprehensive health care has been defined as "the community guaranteeing all groups of population the best available medical care and the maximum coverage for the prevention of illness and promotion of health". The meaning of 'best available' and 'maximum coverage' will depend on the given circumstances, and one has to accept an evolving and flexible definition related to needs and resources. (J. H. Hellberg in "Community Health." VHAI, Delhi)

Examination of present conditions itself may suggest a probable realistic approach or approaches.

1. **The community and its needs :-**

1.1 What do we mean by a community ? Do we count such socially and geographically remote populations as villagers, nomads or peri-urban and slum dwellers ?

1.2 A doctor in a hospital began to realize that due to the rising cost of medical care he was reaching fewer and fewer people in the community. This was especially true about the socio-economically poor people, and these were 60% of the population. This raises the questions : for whom am I responsible ? For whom shall I provide health care ? Am I responsible for those who do not come or cannot come ? We know that those who are in greatest need of health care may not know their need or they may know it but cannot seek health care.

1.3 (a) What does health connote ? Status of health of the people or structure of health services ?

(b) Can health be viewed in isolation from socio-economic realities ? [2,2a].

2. It is difficult to work out the reasons why members of the health services have tried to separate ' health concerns ' from other parts of the total rural hopelessness complex. Is it because we do not understand the problem or feel incompetent or powerless to influence the main issues or because we want to ' control ' our own field ? Whatever the reason, it is clearly not because We have scientific ' evidence that it is the most effective or the cheapest way or that it is what people want. On the contrary, we have evidence that a strict health sectoral approach is ineffective. If we do not consider our restricted approach to be valid, then our reaction to its rejection is

(c) What are the needs of a child who comes to the clinic with pneumonia, hookworm infestation with anaemia and underlying malnutrition ? Certainly antibiotics for pneumonia and antihelmintics for the worm infestation. One may provide, in addition, iron, vitamins and some milk powder. Then the file for this successfully treated ' case ' can be put away. But when the same child comes back several months later, in severely malnourished condition, it is obvious that his personal disease really is a symptom of a wider social ' disease ' in his family and community.

1.4 (a) What are the components of community health care ? The answer is health programme and delivery system.

(b) Which factors determine the formulation, planning, execution and evaluation of the programmes and delivery system ?

(c) How does the structure of effective demand divert the resources to fulfil the needs of a

even more strange. As the health services fail in their bid for additional resources to further their priorities, the health professions then backs on the problem and direct their energies towards developing additional methods for helping the privileged people who can both afford and appreciate them.
(K. W. Newell in " Health by The People " W H O 1975)

2a. With improved standards of living the tuberculosis rate in New York which was 370 per 10,000 in 1882, came down within a period of 60 years – even before specific chemotherapy came in use to just 48 per 10,000. As against this, inspite of technological knowhow, the disease is spreading in our country, almost in an epidemic form (A. T. Phatak in "Community Health" paper prepared for MFC Meet, 1975).

particular section of the population ? [3,4]

(d) Do these needs reflect real needs of the community at large ? Now we are at the heart of the matter. In making these decisions the physician is deciding who shall be served and who shall be deprived, and he is at the same time deciding who shall live and who shall die or be disabled ! By what criteria does he decide ? What value system guides him in choosing his clientle, whether affluent or deprived ? Mothers or children ? Or the old ? Or the fathers ? Or those who can contribute most to the nation's GNP ?

We have constructed a situation in which the burden of moral decision is on a single physician. Is it realistic to expect that one person, physician, will have the social morality to guide

3. If there exists any stratification of the society, then it is likely that new inputs in any discipline would be distributed in a disproportionate manner so that the underprivileged group gets very little benefit from it. In Britain, where National Health Service is operating for 25 years, the standardised mortality ratio for social class I is half that of social class V. (G J Ebrahim in'A model of integrated community health care')

4. This trend (giving priorities to affluent section of community) is very actively promoted by political leadership because the latter depends heavily on such urban oriented sophisticated specialists to meet their own needs and needs of the class they belong to. Ironically, therefore, in practice medical education serves the almost diametrically opposite social purpose, that of serving a few. Even though medical education is almost entirely subsidised by the state, such facilities are available only to the children of a tiny privileged class of the society. (D. Banerji in "Objectives of Medical Education," See p. 22 of this book.)

him in his decisions ? Should his government provide him with directives ? What next if no such directives are forthcoming ?

Are these questions answerable ? Is it socially and politically feasible to make choices publicly that involve serving some and depriving others when human life is involved ? Currently these 'choices' are seldom made. Rather, traditions of health care determine who is served and the rest are deprived by default rather than as a result of studied choice.

1.5 What are the factors responsible for the choice of these wrongly identified needs or priorities ?[5]

Is it :

– Colonial legacy

5. Problems in the area of broad choices are :

(a) Lack of clear national health policy and poor linkage of health services system with other components of national development.

(b) Lack of clear priorities.

(c) Opposition to change in social aspects of health policy

(d) Inadequate community involvement in providing health care.

This may be due to :

A. Political system does not encourage local Self-Governments.

B. Rigid sectoral structure and centralized organisation of most conventional government health services.

C. Competition between the existing traditional health system and the modern system.

D. The system of beliefs of the community.

(Alternative approaches to meeting basic health needs of the population in developing countries, WHO).

Socio-cultural and economic background of planners and executives

- imitation of the 'West'
- migration of educated persons from rural to urban areas
- ignorance on part of the masses of un-educated literates
- poverty or wrong allocation of funds in health sector itself ?

2. Delivery System

2.1 What are the characteristics of the present delivery system and its three components ?[6] viz

(a) Construction technique in public health

6. The present allocation of funds for various heads for a rural hospital is :

(A) Capital cost :	
Hospital building	53%
Staff building	30%
Ward equipments	8%
Stores dispensary stock	4%
Theatre equipment	3%
Vehicles	2%
(B) Annual budget :	
Salaries	52%
Sundries	20%
Interest on capital	11%
Drugs	9%
Capital depreciation	8%
(C) Staff budget :	
Two doctors	20%
15 Nurses	30%
5 medical assistants	20%
32 cleaners	15%

(b) Type and level of training manpower[7,8].

(c) Manpower and equipment used in providing traditional and/or western medical services ?

2.2 Are they (characteristics of the delivery system) :

- capital intensive or labour intensive
- curative or preventive in nature
- urban based or rural based
- costly, centralised, hospital oriented and highly professionalised or cheap, decentralised, dehospitalised and deprofessionalised ?

2.3 These lead to a different set of questions :

7. If governments are to be serious in intentions to supply rural areas with doctors, they must see that more of the equally intelligent but less well educated young people from rural areas find their way into medical faculties. The doctors who will be likely to be happy and contented in rural area is the doctor who has been born, grown up and been educated there. In the future not only must his primary and secondary education but also a high proportion of his medical education be undertaken in rural areas. This latter is particularly difficult as the majority of present medical teachers would themselves be at a loss how to provide medical care in a rural setting.
(David Morley, "Pediatric Priorities in the Developing World" Butterworths, 1974).

8. And then (after being posted in rural area in China) the graduate finds in many cases, that what he has learned during his five years in college is of no use to the peasant. He then comes back to his school and says, for goodness sake, if we have to pay back the peasants, then we had better learn something at the universities that is of some use to them. So there is feedback and curriculum can change very quickly indeed.
(E.F. Schumacher, "The two ways", MRC Bulletin—101.

(a) Where should the health care be provided ?[8]

(b) Who should provide the care ?[9]

(c) How shall they be trained ?

(d) How should it be provided ?

3. **An Approach**

Answers to the above questions may lead to a probable realistic (not pragmatic) approach. To evolve an approach we may have to define the :

3.1 Objectives of community health care

3.2 Beneficiaries of the care

3.3 Kind of society we expect our approach to work in, with regards to economic priorities, distribution of wealth, ownership, community participation in decision making and administrative authority, general educational level of the people, the principle of self-reliance, the role of private practice, control of the pharmaceutical industry etc.

3.4 Difference between health ' wants ' and needs of the community.

9. Patients should be treated as close to their homes as possible in the smallest, cheapest, most humbly staffed and most simply equipped unit that is capable of looking after them adequately. In respect of most of the common conditions there is little relationship between the cost and size of a medical unit and its therapeutic efficiency.

(Maurice King, "Medical Care in Developing Countries).

10. Choosing the right people for training as medical auxilliaries is important. The level of intelligence at the beginning of the training will almost certainly decide the efficiency of service at 10 or 20 years.

(Maurice King, "Report on training in Northern Nigeria, 1966).

3.5 Content and priorities of health programmes[11,12,13,14]

3.6 Pattern of delivery system and resource allocation

11. Content of the health programme may be : curative services, personal prevention, maternal and child health care, nutrition, communicable disease control, environmental sanitation, health education, health supervision of vulnerable groups, and collection of vital statistics.

12. Criteria for building priorities may be decided in the following way :

Problem	Malnutrition	T.B.	Yaws
1. Prevalence	∓ ∣ ∓	+	—
2. Seriousness	∣ ∣ −	— — ⊥	∣
3. Community concern	—	∣ ∓	∓ ⊥ —
4. Vulnerability to management	++	++	∓ ∓ +
Total	36	12	0

Total score developed by multiplying —'s

(John H. Bryant)

13. Planning will involve painful decisions about what can or cannot be done, but if some are to be deprived, it is better if it is through informed decision than by default.

(J.H. Hellberg – ibid)

14. Various methods to measure the effectiveness of programmes may be :

(a) Nutrition programme :
Effectiveness = applied nutrition activity × per cent target population reached × improved nutrition intake

(b) Provision of clean water :
Effectiveness = technology used × number of wells protected × percentage population investing clean water

(c) Tuberculosis control
Effectiveness = technology used × (susceptible protected × reservoir of infection treated) + co-operation.

(G. J. Ebrahim – ibid).

for primary health care[15] (is not equivalent to simplified health care), secondary and tertiary health care.[16].

3.7 Level and type of training for doctors, paramedical workers, village health workers etc.

3.8 Socio-political consciousness of the health personnel.

3.9 Role of traditional practitioners

3.10 Role of drug industry

3.11 Integration with other developmental activities

3.12 Community participation.

The above questions were posed to have an insight in the depth and spectrum of community health. Whether we can evolve and practise a model of community health care depends on how we view its different aspects.

15. Main features of primary health care are :
    (1) use of para professionals to cover greater population
    (2) relative upgrading of preventive services
    (3) more integrated approach (rather than vertical programmes)
    (4) shift from urban to rural areas
    (5) incorporation of traditional systems

16. Jolly and M.King estimated the cost of treatment per illness per person in Kenya at various levels of services as follows :

Health centre	:	4 shillings
District hospital	:	84 "
Regional hospital	:	150 "
National hospital	:	370 "

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